AMERICAN BUILDER

formerly AMERICAN CARPENTER AND BUILDER

Member of the Audit Bureau of Circulations—Circulation Audited and Verified April, 1923

American Builder

Entered as second-class matter July 1, 1905, at the post office at Chicago, Ill., under the Act of Congress of March 2, 1879.

Published on the first day of each month by

AMERICAN CARPENTER AND BUILDER COMPANY

WM. A. RADFORD, President, Treasurer and Editor-in-Chief...
E. L. HATFIELD, *Vice-President and General Manager.*
BERNARD L. JOHNSON, *Editor.*
ROLAND D. RADFORD, *Secretary.*
DELBERT W. SMITH, C. R. W. EDGCUMBE, L. H. REICH, E. B. WOLFROM, O. H. SUTTER — *Advertising Staff*

Publication Offices:
Radford Building, 1827 Prairie Ave., Chicago

TELEPHONE: CALUMET 4770

EASTERN OFFICE: 261 BROADWAY, NEW YORK CITY

SUBSCRIPTION RATES

One year, $2.00; six months, $1.00; single copies, 35 cents. Extra postage to Canada, 50 cents; to foreign countries, $1.00.

PROTECTION FOR OUR READERS

The publishers of the AMERICAN BUILDER reserve the right to decline any advertising they believe is detrimental to the interst of its readers; to edit advertising copy and to change or eliminate any statements that reflect injuriously or cast discredit upon other building products, machinery, equipment, supplies or tools.

Be sure in writing to advertisers to say: "I saw your advertisement in the AMERICAN BUILDER."

ADVERTISING RATES

Furnished on application. Advertising forms close on the 15th of the month preceding date of publication.

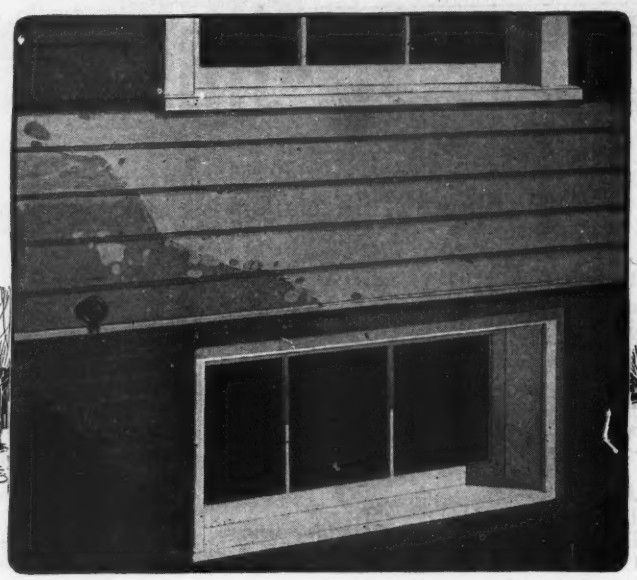
VOL. 36 — March, 1924 — No. 6

Table of Contents

AN INVITATION TO YOU

The AMERICAN BUILDER cordially invites and urges you to enjoy the privileges and benefits of its Correspondence Department. Any phase of any building question may be profitably and instructively discussed in this department. If your problem is a knotty or technical one submit it to the Correspondence Department and secure the benefits of the opinions of other experienced builders. It's a "give" as well as a "take" department, and you are asked to relate your achievements and tell how you have conquered difficulties as well as to ask for information and advice. Rough drawings are desired, for they make clear involved points. We will gladly work over the rough drawings to meet publication requirements. The Correspondence Department is your department. Use it freely and frequently.

We have interesting booklets for Architects, Contractors and Dealers. Please tell which booklet you want.



There's Always A Hurry For Cellar Frames

THE moment a foundation is started the men want the cellar sash frames. No time to make them—you cannot afford to delay the men or the job. Here's where Andersen Cellar Sash Frames come in handy. Any Andersen dealer is ready to deliver them in standard sizes.

Once in place Andersen Standard Frames last for years, because all exposed portions are of Genuine White Pine.

Reasons Why Andersen Frames Are Preferred:

1. Immediate delivery—no expensive delays waiting for special frames.
2. 121 sizes ready for every purpose.
3. Delivered in two compact bundles plainly marked for size and easily handled.
4. 7 units instead of 57. No small parts to be come lost or broken.
5. No sorting, measuring or refitting. The complete frame nailed up with pockets and pulleys in place in ten minutes.
6. Accuracy gives smooth running windows, yet excludes weather.
7. Modern machinery, methods and specialization lower costs at the factory; quickness of assembly saves you time, labor and money on the job.
8. Better results in frame, brick or stucco buildings.
9. White Pine preserves original accuracy and gives continuous service.
10. Made by largest exclusive standard frame manufacturer. The trade-mark is absolute protection.

Andersen Lumber Company

Dept. A-3 **Bayport, Minnesota**

Andersen FRAMES

Salvaging Six Famous Columns

The Magnificent Pale Green Granite Columns and Polychrome Terra Cotta Members of Madison Square Presbyterian Church Find Rebirth in the Facade of Hartford Times Building

WHEN Solomon built his temple; when the Doges fostered the building of St. Mark's; when Santa Sophia bloomed into being in Constantinople, the materials used in the construction and embellishment of these buildings were gathered from other famed buildings in all parts of the world.

In the summer of 1919 the publishers of The Hartford Times, Hartford, Conn., decided to put up a building which would house their continually growing, old-established newspaper. They were fortunate in securing a large and desirable portion of ground in one of the most important parts of the city, with the principal frontage on Prospect Street, facing the Morgan building and the new Municipal building. The Times commissioned Donn Barber, a well-known architect, to devise a building which would satisfy all the demands of location and utility.

Meantime, down in New York the ever-crowding demand for business space was encroaching upon a famed church structure to its destruction. This was the Madison Square Presbyterian Church, built in 1906, and known as Dr. Parkhurst's church. It was the last and probably the best structure designed by the late Stanford White, and in 1907 had been awarded the Medal of Honor of the New York Chapter of the American Institute of Architecture in the exhibition of the Architectural League of New York.

Architect Barber decided to secure the major portions of this classic edifice for incorporation in the new Times building, not to duplicate the form of their use, but rearranging with a view to the requirements of the new structure, and thereby save the beauty of the materials for posterity.

"I instinctively called to mind the beautiful colonnades at the ends of streets and vistas; the Madelaine and Pantheon, the Chambre de Deputies in Paris; the

A Night Picture of the Six Marble Columns That Were Taken from Dr. Parkhurst's Church in Madison Square, New York City, and Put Into the Front of The Hartford Times Building, Hartford, Conn.; Donn Barber, Architect. (See photo of front of once famous church before it was wrecked.)

number of examples in Italy and elsewhere," says Mr. Barber. "The wonderfully beautiful and picturesque precedents of the buildings in Italy occurred to me, where the principal facades are treated frankly as such and backed up as such by buildings of an entirely different character in design. I went down to the Parkhurst church and satisfied myself that instead of demolishing the building in the usual way it was possible with care to take it down piece by piece and number and pack the pieces.

"I seemed to see the possibility of using the six-granite columns and the two granite pilasters of the porch motif arranged in a colonnade motif of seven bays for the proposed new building by bringing the wall pilasters around and out in a line to the plane of the columns; also with the many running feet of polychrome terra cotta cornice and other members encircling the church, the chance of creating a long flat composition.

Dr. Parkhurst's Famous Church in Madison Square, New York City, Showing the Six Columns That Were Transplanted Into the Hartford Times Building.

"In the design of the new Times facade the original columns, pilasters and cornices are used, the steps, platforms and base courses all fitted together as they were originally with the exception of the change in position of the pilasters. In the back wall of the arcade are used all the principal openings of the church facades. The large circular windows of the Twenty-fourth Street facade have been used to form circular-headed entrance doors, and the other windows on the Twenty-fourth Street facade and the windows under the columns on the Madison Street facade, and the two side doors, are all used in the new arrangement of this wall.

"The pediment over the main entrance porch of the Parkhurst church and certain other features proved to be mostly of an ecclesiastical nature and therefore were not suitable for the new scheme.

"As the church was taken down each piece of terra cotta was numbered according to an arranged scheme, and although many of the pieces in the new building find themselves side by side as of old, transpositions have been made necessary in certain places. For instance there existed a certain number of definitely designed breaks and right angle turns in the cornice so that I was limited in the new composition to these breaks that existed.

"In the new composition the original Corinthian order is changed to Ionic. By the use of an Ionic cap in the order and an added plinth between the column base and pedestal we were enabled to adjust the height of the order to our established story heights. In comparing the photograph of the old church now destroyed with one of the new Times Building, it is easy to see what materials have been used and in what new combinations.

"It has been an inspiration and a most interesting experiment to have been able to preserve and use these gorgeous materials. Besides the magnificent green granite columns, the colored glazed terra cotta of the architectural members, the capitals, cornices, friezes, soffits, jambs and trims of doors and windows, band and base courses—all executed in full color—could not in all probability be duplicated at the present time under the conditions obtaining in the material market and the tremendously increased cost of building materials."

The builders of the new Times Building the Marc Eidlitz & Son, Inc., New York.

Glimpse of a Patio in a Beautiful California Spanish Bungalow Home.

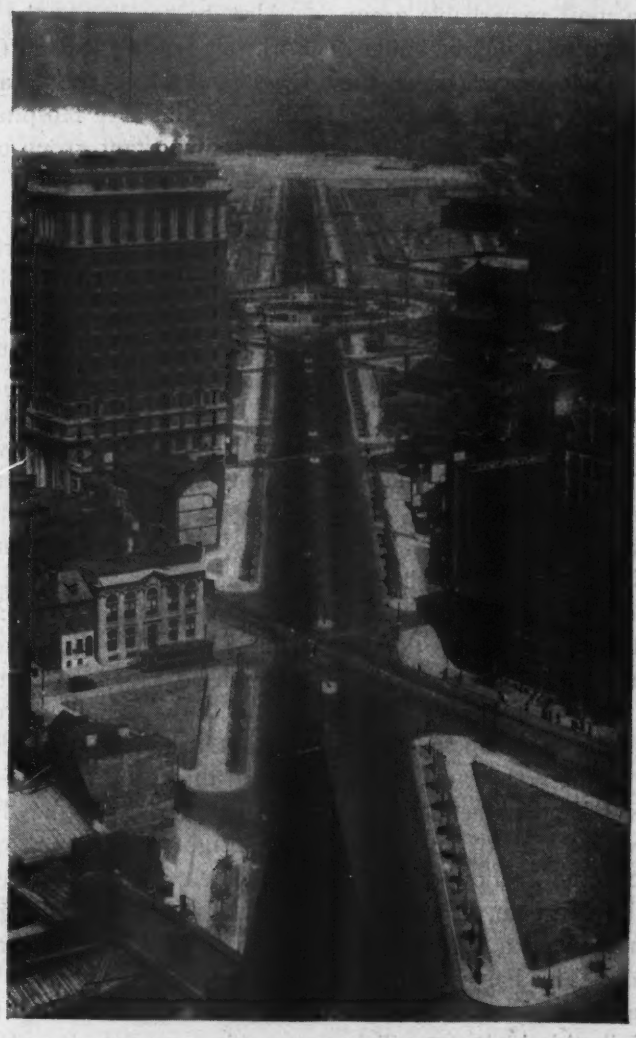
Philadelphia Parkway Improvement

Thirty Million Dollars Spent by City of Brotherly Love to Tie Up Civic Center with Beautiful Fairmount Park

By ROBERT F. SALADE

WHAT is said to mark the greatest twentieth century accomplishment of any city in the world is the Fairmount Parkway improvement of Philadelphia. This new Parkway system connects the heart of "The Quaker City" with beautiful Fairmount Park, and was completed at a cost of nearly thirty million dollars. On both sides of this magnificent boulevard are to be erected numerous public and semi-public buildings, several of which are now in course of construction, and when all of these are finished, Philadelphia will indeed have many additional attractions for tourists as well as for its own people.

For many years Philadelphia has been notable for its splendid Fairmount Park, but now it also possesses some twenty smaller size parks (in addition to many city squares), located at convenient points throughout the city. This entire series of public parks are now linked together by the Parkway, two great boulevards, Broad Street, and various driveways extending through Fairmount Park. More than 6,900 acres of ground are occupied by the parks, boulevards and the Parkway.



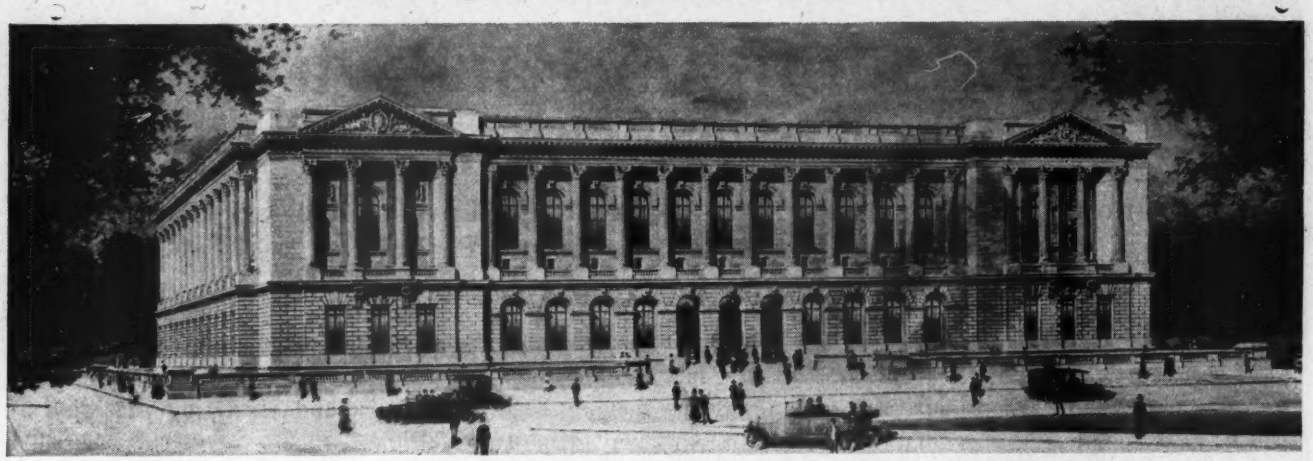
One Thousand Buildings Were Razed to Make Possible the Parkway in Philadelphia, Which Links Together the Entire Series of City Parks.

To make possible the Parkway, with its great highway and system of open spaces and plazas, it was necessary to cut a very broad path through many solid blocks of buildings. Some idea of this huge piece of engineering can be gleaned from the fact that about one thousand properties were in the way of the improvement, and the same number of buildings were removed, the great majority of them having been homes. The thirty million dollars mentioned for the cost of the Parkway were spent for condemnation proceedings, the acquisition of ground and the actual construction work of the thoroughfare, the money having been raised on bond issues by the City of Philadelphia.

Throughout the territory which now embraces the Fairmount Parkway the physiognomy of the city has been changed wonderfully for the better. In several cases at least it was essential to demolish for the course of the Parkway rows of small, dilapidated houses which were by no means a credit to "The City of Homes." By the elimination of the narrow streets and courts formed by the old buildings, the character of the entire neighborhood was raised to a higher standard. The substantial increase of real estate values in all parts of the Parkway district will more than repay the city for the cost of the improvement as time goes on.

Already a number of handsome new buildings have been erected along the Parkway; several others are rapidly nearing completion, and many other fine public and semi-public buildings are to be put up in the near future. Brief descriptions of some of the most important structures will be given in this article. The Parkway itself has been practically completed, with the exception of certain landscape work, sculpture and gardens.

The length of the Parkway proper is 6,300 feet, and it has a varying boulevard width of from 140 feet to 250 feet. It extends diagonally from the southeastern end of Fairmount Park to Broad and Filbert Streets, at the north side of City Hall. It has been the means of creating three great plazas; has provided for three groups of public and semi-public buildings, and has



The New Free Library of Philadelphia as It Will Appear When Completed. The Building Faces the Parkway at Logan Square.

formed the groundwork for a most remarkable group of Art buildings, several of which will soon be built.

At the southeastern end of Fairmount Park, on the site of the old Fairmount Reservoir, is now being constructed the Philadelphia Museum of Art. The axis of the Parkway leads from the center of the main facade of this large building, which means that the Art Museum will dominate the Parkway throughout its entire length. The view from either end of the highway is delightful. At a point about mid-way from either end can be seen the beautiful Swan Fountain. This fountain is in a large circle which is now included in the plazza at Logan Square.

Said James M. Beck, the famous attorney: "Have you ever thought of the countless millions of children, yet unborn, who in the hot days of summer will stand around the fountain in Logan Square and hear the splashing waters and feel their little souls refreshed by the psychological effect of falling water?"

The partly constructed Art Museum stands upon a mound known as "Fairmount Hill." The Schuylkill River makes a graceful bend just as it flows past the foot of Fairmount Hill; thus the Museum will command two charming stretches of the river at this point, one to the proposed Schuylkill Embankment Drives, the other to the northwest, where the stream travels through a picturesque tree-covered section of Fairmount Park. In front of the Museum, at the base of Fairmount Hill, has been planned a broad plaza, 900 feet long and 400 feet wide. This has been named Fairmount Plaza, and as the Parkway extends from it in the direction of City Hall, this highway will be flanked on either side by other architectural palaces of the Art Group. One of these buildings will be the new Pennsylvania Academy of the Fine Arts, while another will be the new Pennsylvania Museum and School of Industrial Art. It has also been suggested to have the proposed John G. Johnson Art Gallery erected in this vicinity. The spacious sections to be occupied this group of art buildings will be developed into "The Parkway Gardens," after the elaborate plans for beautiful landscape designs prepared by M. Jacques Greber.

Already standing at the Logan Square Plaza of the Parkway are the Roman Catholic Cathedral of Saints Peter and Paul, the Academy of Natural Sciences and the Wills Eye Hospital. But in addition to these another important group of new buildings will be put up along both sides of the Parkway near Logan Square, and among this group is the new Free Library of Philadelphia, for which the city has appropriated $4,500,000, and which will be completed within the next year. The city has also authorized a loan of $500,000 for beginning the work on the proposed new Municipal Court Building, which, according to present plans, will be erected opposite the new Free Library. The Franklin Institute owns ground for its proposed new building at Nineteenth and Race Streets, and has $1,000,000 available for the purpose.

Between the Fairmount Plaza and Logan Square the Parkway is 250 feet wide. Logan Square has been enlarged in such a manner that it now extends from Eighteenth Street to Twentieth Street, the dimensions of open space thus formed measuring 950 feet by 730 feet. In the center of Logan Square has been arranged a great circle, the Parkway passing around this circle, which is really in the middle of the thoroughfare. As the Parkway continues onward, from Eighteenth Street to Sixteenth Street, it is 140 feet wide. Then at Sixteenth Street it again broadens out into a plaza, extending to Broad and Arch Streets, and in front of City Hall at Broad and Filbert Streets. This big Central Plaza, as it is called, occupies a space 1,000 feet long and more than 500 feet wide. On the ground near Broad and Arch Streets the city has erected a band stand and shell, and here during the summer months high-class concerts are given by The Philadelphia Band. In addition to these concerts, others are given at various parks and places throughout the city by The Municipal Band, while in Fairmount Park complete series of concerts are given by The Fairmount Park Symphony Orchestra and The Fairmount Park Band, all at the expense of the City of Philadelphia.

Various plans have been proposed for enlarging the Central Plaza, and talk about these plans was revived

when a fire recently destroyed the mammoth train shed of Broad Street Station, owned by the Pennsylvania Railroad Company. One plan, which appears to be the best for the purpose, is to enlarge the Central Plaza by means of moving Broad Street Station back to a point 100 feet west of Fifteenth Street, the facade of the new station to turn and extend along the southwest side of the Parkway. If this idea is carried out it would give the city a good-size plaza in front of the western side of City Hall (in addition to the present plaza on the northern side of this structure), and it would enable the Pennsylvania Railroad Company to build a larger and more imposing terminal, as by this proposed plan the city would give to the railroad company that section of Filbert Street on the northern side of the elevated tracks leading to Broad Street Station. In other words, this section of Filbert Street would be given in exchange for the ground required for the enlarged plaza. It has also been suggested to have the tracks in the new station depressed like those in the Pennsylvania Station of New York City.

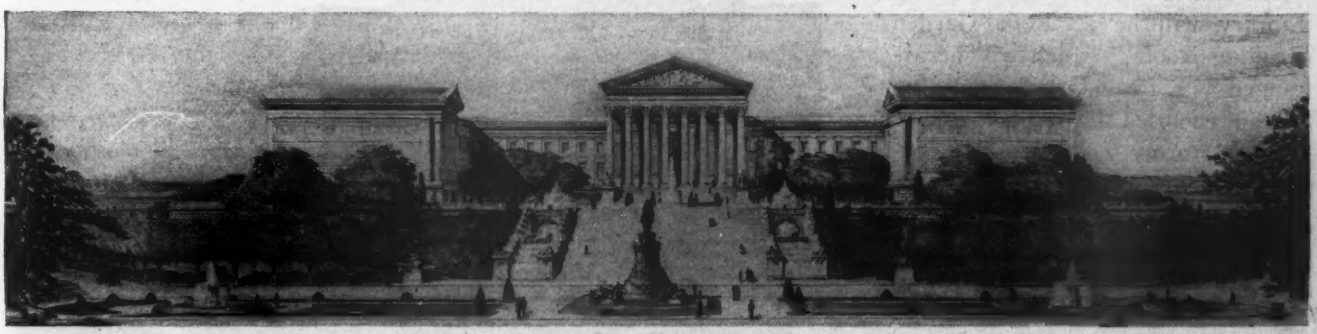
The tall building of the Bell Telephone Company, at Seventeenth and Arch Streets, was the first large structure to be erected on the new Parkway. As mentioned, the Philadelphia Art Museum and the new Free Library are now being constructed. Opposite the Art Museum sites have been alloted for the new Pennsylvania Academy of the Fine Arts and the new Pennsylvania Museum and School of Industrial Art. In this section ground has also been alloted for the proposed Episcopal Cathedral. Among the other new buildings to be built along the Parkway, in addition to the Municipal Court, are the following: "Victory Hall," an Insurance Building, Hall of the American Philosophical Society, Convention Hall and a new structure for The Academy of Natural Sciences. A Federal Building and a permanent State Office Building have also been suggested, to be completed in time for the Sesqui-Centennial Exhibition, which is to be held in Philadelphia during the year 1926, in honor of the one hundred and fiftieth anniversary of American Independence.

Standing on the high ground of Fairmount Hill, the Philadelphia Museum of Art rises far above the plaza, its plan being in the form of a great "U," and the inner part of the U forming a grand court of sculpture and gardens. In front of the main entrance, on the plaza, will be placed the famous equestrian monument of Washington, modeled by Professor Siemering, of Berlin, and which was unveiled in Fairmount Park by President McKinley in 1897. The Museum is about 555 feet long and about 320 feet deep, with the central mass projecting about 175 feet beyond. The Court is about 350 by 250 feet. The main entrance is on the first floor on which will be placed sculpture, exhibits of decorative art, etc., and in the outer corners of the first floor will be large courts for the display of full-size sculpture and examples of fine architecture. The second floor will contain all of the principal picture galleries and a spacious gallery for tapestries. In the basement will be located the administrative offices, the offices of the Fairmount Park Commission, and a first-class restaurant for the convenience of the public. At the sub-basement level is a tunnel-gallery running the full length of the building which by means of elevators will allow access to the upper floors.

The style of architecture is classical Greek. The stone is of a rich yellow color and will be adorned with sculpture. The frame-work is of steel, and the roof will be of polychrome tile. Upon all sides of the Museum will be terraces. The estimated cost of the building is $8,000,000.

The bequests of five individuals have made the Philadelphia collection of rare paintings the finest of its class in America. The names of these notables are: Mrs. William P. Wilstach, John G. Johnson, William L. Elkins, George W. Elkins and John H. McFadden. All of the pictures referred to, with the exception of the Johnson collection, will be placed in the main galleries of the Art Museum, and it is hoped that eventually the Johnson collection will also be placed there so that all of Philadelphia's famous collections of paintings will be housed under one roof. Many of the fine collections of art, which for the present are in Memorial Hall, Fairmount Park, will also be moved to the new Museum upon its completion.

Included in the scheme of the Parkway is the improvement of the old Fairmount Waterworks on the Schuylkill River, in the vicinity of the Art Museum.



Standing on the High Ground of Fairmount Hill, the Philadelphia Museum of Art Rises Far Above the Plaza, Its Form Being in the Shape of a Great "U". The Washington Equestrian Statue Will Occupy the Central Foreground Below the Terraces.

The Portico of the Waterworks is of pleasing architecture, and the view of the river from this columned porch is exceedingly beautiful. Among the interesting features of the waterworks is a new aquarium.

On Wednesday, Jan. 24, 1923, was laid the cornerstone for the new Free Library which will occupy the block of ground bounded by Nineteenth, Twentieth, Vine and Wood streets. This will be the main library of the Free Library System of Philadelphia which has twenty-eight branches in as many different sections of the city. The ground measures 385 feet by 219 feet, and the site is regarded as an eminently desirable one for the main library, as it is protected on all four sides by streets, and it only five blocks from City Hall. The plans call for a building 300 feet long, 200 feet deep and 100 feet high. It is being constructed of limestone with a granite base, and is of the renaissance style of architecture, following closely in motives the buildings of Gabriel on the Place de le Concorde, in Paris.

In capacity, this Library will rank with the largest institutions of its class in the world, being only exceeded in this respect by the British Museum, the Library of Congress and the New York Public Library. Its total book capacity will be about 1,500,000 volumes, of which 1,250,000 will be accommodated in a seven-story book-stack facing Wood street. The main public entrance for readers will be on the front, facing Logan Square, with separate entrances to the Children's Room and to the Newspaper Room on Twentieth street.

The main reading room and circulation department will occupy a large space on the second floor of the building, facing Logan Square, while "Pepper Hall" will take a similar space at the rear, facing Wood street. Both of these rooms, as well as the rooms occupied by the larger departments of the Library, will have direct access to the bookstack. Reference, Periodical, Map, Print, Manuscript and Music Rooms, Exhibition Rooms, a large Lecture Room, a Reading Room for the Blind, a Reading Room and Lecture Room for Children, a Public Documents Room, etc., have all been provided for, in addition to a large number of study rooms and the business offices of the Library.

An unusual feature of the new Library will be a "Roof Garden Reading Room," which will be arranged as a formal garden opening on an enclosed loggia for use in cold or stormy weather. The construction of the building throughout will be as nearly fireproof as possible, the plans calling for re-inforced concrete floors and a steel frame, with the exterior masonry walls of brick faced with limestone.

On Dec. 12, 1907, the Fairmount Park Art Association presented to the City the plan which had been especially prepared for it by a commission formed of Paul P. Cret, Horace Trumbauer and C. C. Zantzinger. This plan, which in 1918 was somewhat amplified by Jacques Greber, is now being carried out with the most gratifying results. Great credit is due both the Fairmount Parkway Art Association and the late Mayor, John E. Reyburn, for having made the Fairmount Parkway the greatest improvement of its kind ever attempted by any city. The Parkway is now under the care of the Commissioners of Fairmount Park.

As proposed by the Greber plan, the Parkway is now being embellished by trees, flowers, gardens, fountains and sculpture, but it will naturally require several years to complete this splendid work.

✣

Builder Devises Clever, Inexpensive Advertising Stunt

By THOMAS F. MOFFET

FOR a period of two weeks a considerable gathering of persons lined up both day and night in front of the window of the Chamber of Commerce, Saranac Lake, N. Y. And it was the most natural thing in the world that a continuous stream of new people stopped to see what it was all about. They witnessed a remarkably clever and effective advertising device arranged by Alfred H. Hale, a contracting builder of their town.

Mr. Hale has been specializing for a number of years in the building of high-class bungalows, and most of his contracts had brought him somewhat out of town to country estates and the suburbs. The point is that most of the folks right in his own home town were not really aware of the fact that he was doing such high-grade work. Mr. Hale brought all this information to them forcibly through the construction of a small model of one of his recent buildings.

The Chamber of Commerce incidentally was glad to show the model because it had been endeavoring to convey to visitors the information that out in the outlying districts, and often in hidden away places, some of the finest local homes were to be found.

Model of Building Erected by Alfred H. Hale, Contractor and Builder, Saranac Lake, N. Y., for Advertising His Work.

How Gardner Does It

"Say It With a Home and Raise Your Own Flowers," Says Massachusetts City—Interesting Plan to Help Average Man Own Home

By TUDOR W. BRADLEY,
Manager, Gardner Chamber of Commerce

THE ways and means whereby intending home-owners may be encouraged to take the important step from renting to owning are always interesting. Some of these steps are taken through the building and loan association of a town or city. Again, some of the commercial organizations undertake to finance the home owner, since it is a civic asset to have a community filled with home owners whose minds are freed from the petty worries attendant upon trying to finance their ownership of a house on their own account.

AMERICAN BUILDER readers may be interested in the plan by which the Gardner, Mass., Chamber of Commerce helps the average man to own his home.

These Homes in Gardner, Mass., Were Financed Through the Indorsement of the City's Chamber of Commerce.

We have a signed agreement by the business men of Gardner each with the liability limited to $1,000 which is not binding upon the heirs or estate of the signer. One hundred two men of the community signed the agreement, making it possible for the Indorsement Committee to go on paper up to $102,000.

The plan works out as follows: The man wishing to build a $5,000 house must have at least 10% ($500) to invest in the home himself. The Savings Bank, under the Massachusetts law, can loan a maximum of 60% of the proposed value, which would mean $3,000, on a first mortgage from this source. The $1,500 necessary to completely handle the transaction is then borrowed on a personal note given by the home purchaser and indorsed by our committee to some bank. A second mortgage is given by the home purchaser to the Indorsing Committee for their protection.

Payments are required on the second mortgage, to be made monthly direct to the bank. These payments are so arranged that the second mortgage will be paid off in from five to nine years.

We have not as yet sustained any losses under this agreement and every payment has been made when due. We find that the moral encouragement given to those who desire to own a home has been one of the greatest benefits of our plan, because many individuals would like to own homes but are doubtful of having a sufficient amount of money with which to complete it.

We believe that by encouraging people to own their own homes and having a plan by which we can assist them we have been responsible for one of the biggest building booms this community has ever seen. We issue a little booklet for the benefit of prospective home-owners, which talks with them along such lines as the attitude of mind to have, the savings account necessary, the financing of the home, the selection of a good site, the house itself, the two-family house, and the way the monthly payments will have to be arranged. We find this booklet, unpretentious as it is, to have excellent value, since it states concretely a few of the things people have in their minds when they consider the building of a home. Our housing indorsement plan has had the attention of the housing chief of the Department of Commerce.

✣

Preparing Roofing Simplified

AT a meeting held at the Department of Commerce with representatives of the Division of Simplified Practice and the Chamber of Commerce of the United States, manufacturers, distributors and consumers of prepared roofing agreed to the following simplifications as being of benefit not only to the industry but also to the public at large:

1. To eliminate all grades or kinds of slate-surfaced and also stone-surfaced prepared roofing that do not measure up to the requirements of the "Class C Label" of the Underwriters' Laboratories.

2. To reduce the varieties of smooth surface roofing to seven lines or grades—weights and qualities being considered.

This Simplified Practice Recommendation became effective Jan. 1, 1923, and is to hold for one year.

✣

AT a meeting of manufacturers, jobbers, plumbing dealers, etc., held at the Department of Commerce, Washington, D. C., on October 30th, it was recommended by the National Master Plumbers' Association that: "Range boilers shall have one side tapping 6 inches from the top and one 6 inches up from the bottom, and two tappings in the top and one in the bottom. All tappings are to be 1 inch." This recommendation was unanimously adopted, to be effective at once.

Tile for Ornamenting Stucco

The Practical and Decorative Tile Finds Important Uses in Work of Best Architects and Builders

By NANCY D. DUNLEA

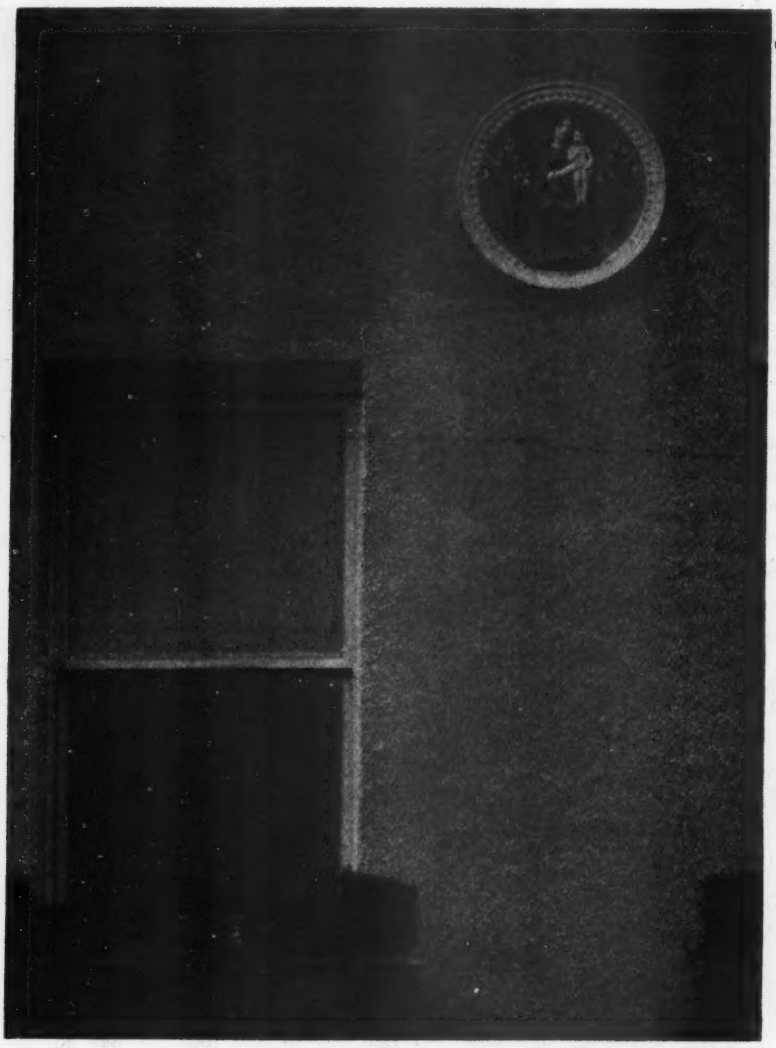
THE practical and artistic possibilities of tile, for both the exterior and interior of the home, are just beginning to be realized. While the "decorative use of tile is still in its infancy" because it has been "visualized by many as a sanitary product for kitchen and bath," the revival of period styles in architecture has caused us to look around and borrow the charm of other countries and times.

"The brilliant past of the potter has hardly been realized by the average home builder." During the middle ages tiles were used because of their permanency and easy upkeep. But the more ancient civilizations such as existed in Egypt, artistic Greece, pompous Rome, mystic Persia and florid Byzantium, gloried in their adaptation to fine architecture as even the ruins show. In uninterrupted chain, tiles descended to Spain, France, Italy and England. Even Aztec and Mexican potters have contributed their wealth of color to the modern tile.

So that "structural clay" need not be crude is being proven by modern American manufacturers who have developed a great variety of tiles embodying both the old and the new in shape, texture, color and design.

Texture indeed is one of their most artistic features. It creates a background soft or brilliant, as desired. Tuscan glaze is an example of one unusually delightful texture.

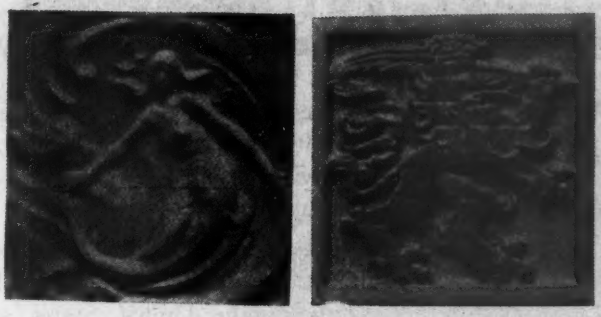
Color is the newest feature of the tile that presents infinite possibilities for decoration and likewise proves that tiles need not appear cold. Greek motifs, for example, reproduced from the Parthenon metopes are rich in color. Used as a floor, tiles can be as delightfully warm in effect as an Oriental rug. Some tiles borrow rich harmonies from Italian majolica ware and the work of Della Robbia both with their bright blues, vermillions and golds. When used to emphasize Renaissance architecture, such tiles are very distinctive.



The Introduction of Color Notes Into a Stucco Wall Though the Use of Decorative Tile Units, as with This Madonna Medallion, Is Architecturally Correct.

Stucco is undeniably a happy background for tiles, whether inside or out, for its austere simplicity has just the neutrality to make a gorgeous bit of color an exquisite contrast. A home of the Italian or Spanish Renaissance type is especially artistic when tile decorated, for the variety of texture in tiles makes it possible to harmonize it with any stucco finish. Moreover, the introduction of color through tiles is architecturally correct because of the basic relation between them and stucco. So tiles can be attractively used by any stucco home whether of Spanish or Italian style, or of French, Flemish or early English suggestion. A tiled facade, vestibule, lower story, gable arch, pediment, corbel, frieze, or panel may be exceedingly picturesque.

Better yet, the practical is combined with the artistic in the durability of the tile. Great extremes of weather have no deteriorating effect upon it. Sun will not fade it, so this makes it very serviceable for such places as garden walls, terraces, pavements, stairways, benches and such outdoor rooms as the porch, patio or loggia, sun room or conservatory. Around a fountain they "reflect the playful impulses of outdoors." In a sunroom they harmonize with the gayety of sunshine, flowered draperies



Attractive Tile Units in Monochrome or Polychrome for Random Insertion in the Exterior Stucco Wall.

and light furnishings.

It must not be forgotten, however, that as pleasing as are the brilliant contrasts achieved with tiles and Spanish-Moorish architecture, there is beauty in subtle blends of tile and stucco. Soft neutral greens, for example, may be just what is desirable for certain places. For a porch floor they are very restful. But the variety of color schemes is indeed what makes tiles fascinating for decoration inside or out. Dark blue glazed tiles set in the four corners of the exterior of a pink stucco bungalow, for example, individualized one home.

This individuality is even more appreciated inside the home, for tiles quite outdo the more commonplace treatment of floors and walls. "The various kinds of unglazed, glazed, inlaid, embossed, bright, dull and matt finishes which are made in squares, oblongs, diamonds, hexagons, octagons, triangles and circles in an unlimited color range" make great distinction attainable. Halls, stairways, living, dining rooms, kitchens, baths and laundries are all attractive tiled, for it eliminates the "ready-made" look. An artistic background for any type of furnishings is achieved simply through color and design, for there is such a wide choice of treatments. The various units can be assembled in patterns that rival wall paper, rugs, linoleum or other fabrics. Or, the tile may be just a decorative note in the room. A niche for a bit of bric-a-brac in a stucco wall is thus an interesting motif. The Old World atmosphere so desired now in stucco homes is cleverly emphasized in a loggia by such a niche tiled for a bird bath or water olla. Electric wall brackets are seen joined to the wall with a small squares of tiles. Panels, mouldings or wainscotings of tile have much of the interest of a tapestry or picture. Used as a "trim" for baseboards, doors or windows, it is decidedly successful. "Stories in tile" are effective for the fireplace, but equally appropriate for the living room or library with its bookcase. Used for this purpose they may outline the built-in. The space where a sideboard, or a musical instrument such as a piano, phonograph or radio outfit is placed, then becomes an ornamental feature of the room. A radiator grill is attractive tile edged and the window seat converted into a trough for growing plants is both charming and practical when constructed of tiles in soft greens and creams. Either solid colors or patterns in tiles may be chosen to harmonize with other details of the room, for sizes and shapes to accord with the architectural scale have been worked out ready for use.

A tiled fireplace is very home-like and because tiles are a fire product they seem to "belong." They are being used also for the over-mantel as well as the hearth, hood, jambs and general facing. For the first, landscapes or "stories" and symbolic effects are interesting and when hand-wrought to be especially prized.

One of the greatest tile artists of today is H. D. Lilibridge, who developed the artistic with the practical.

The advance made in color and design, which the craftsmen of past history have inspired, coupled with the durability of tiles, has even brought us a more attractive bathroom. While a room that "looks its cleanliness" is demanded, further decoration is now desired. A certain degree of distinction is decidedly gained with a touch of color. Whether a cool invigorating effect, a warm cozy appearance or a neutral result is sought, the versatile tile will insure it. A border of blue and yellow for example is much more pleasing than a severe white wall. Tan and cream, gray and blue are subtly related tones, too, that do not sacrifice sanitation to beauty.

Even in the kitchen, laundry or garage the touch of color in immaculate white is pleasing. Homes of luxury are of course using color more freely than ever before. Black or dark blue may border the walls or floor of tile and have the same picturesqueness as marble. Such surfaces are very practical when thus constructed for they are easily cleaned and will not require painting, polishings, rubbing or oiling. Mere cleaning with water to wash off any dirt accumulated over the original color is all that is needed. Their

This Aztec Fountain Is Made of Brilliantly Colored Tiles and Sets Against a Rough Stuccoed Wall. No doubt of its colorful attractiveness.

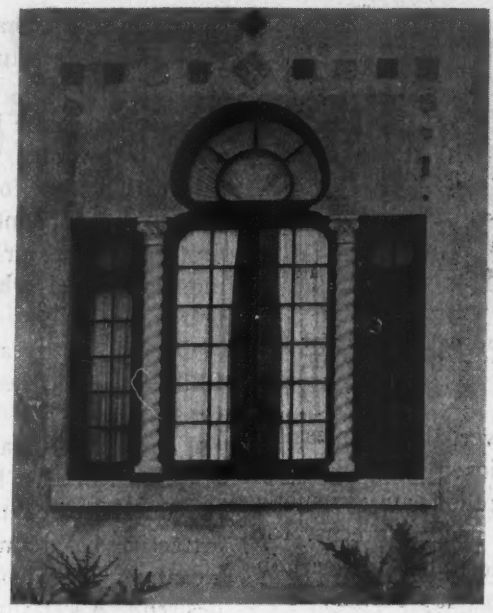
fireproof quality is a further consideration when expense is reckoned. But their resistance to wear, weathering, and even cleaning compounds makes them truly practical.

Of final importance is their installation. To set, point and finish them requires an expert, which, however, is usually available from the place where tiles are selected.

✣

1924 Marks Centennial of Cement Industry

OLD records on file in the British patent office show that in 1824—just one hundred years ago—an English bricklayer named Joseph Aspdin was awarded a patent for a material he called "portland cement." At that time a number of men were engaged in experiments in an effort to produce a cement superior to the natural cements then in use. As far back as 1756 an English contractor named John Smeaton had discovered that an impure limestone containing a certain amount of clayey matter possessed decided hydraulic properties when burned. Aspdin's contribution was his discovery of the value of taking proper proportions of different ingredients and then pulverizing and thoroughly mixing them before they were burned into clinker, which later was finely ground. He called his material "portland" cement because when it hardened it resembled a building stone quarried on the Isle of Portland.



Small Tile Square in Soft Colors Arranged in Simple Pattern Above a Window.

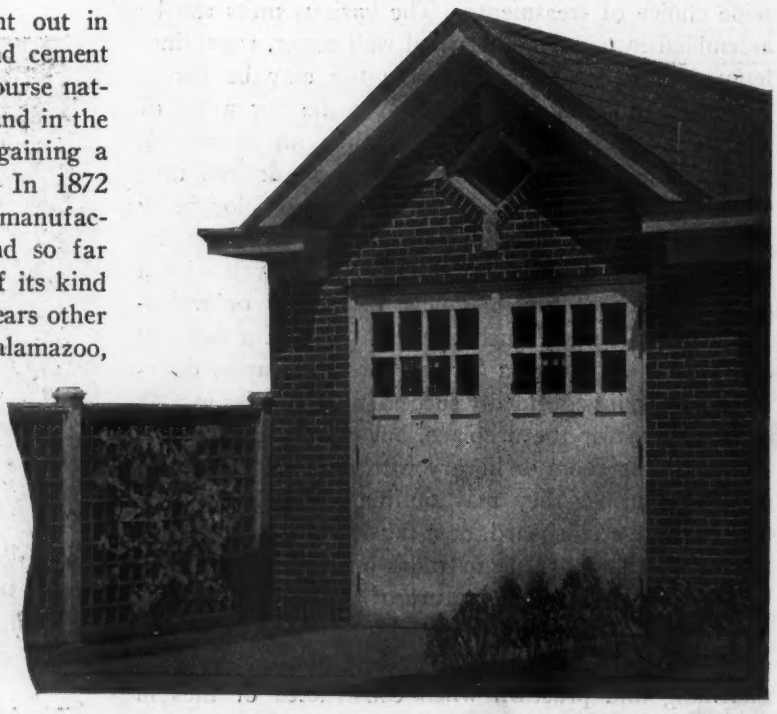
Although Aspdin's invention was brought out in 1824, it was not until 1872 that the portland cement industry started in the United States. Of course natural cements had been used here for years, and in the late sixties imported portland cement was gaining a strong foothold in the American market. In 1872 David O. Saylor established a plant for the manufacture of portland cement at Coplay, Pa., and so far as can be ascertained this is the first plant of its kind to be started in this country. Within a few years other plants were built at South Bend, Ind.; Kalamazoo, Mich., and various parts of the east.

Many interesting stories are told in connection with the early efforts to produce portland cement in the United States. One man used a cookstove in which to burn rock while conducting his experiments. Another used a piece of sewer pipe as a kiln and ground his materials in a coffee mill. Still another pressed a bent car-axle into service as a part of a grinding machine. For a number of years the reputation of imported cements was so strong that American manufacturers had a difficult time in securing a market for their product. It was not until the late nineties that the home product took its place on an equal footing with imported cement, and eventually won the market.

One hundred years after the invention of the material the plants of the United States are producing more portland cement than the rest of the world combined. United States Geological Survey figures indicate that about 135,000,000 barrels were made in this country in 1923.

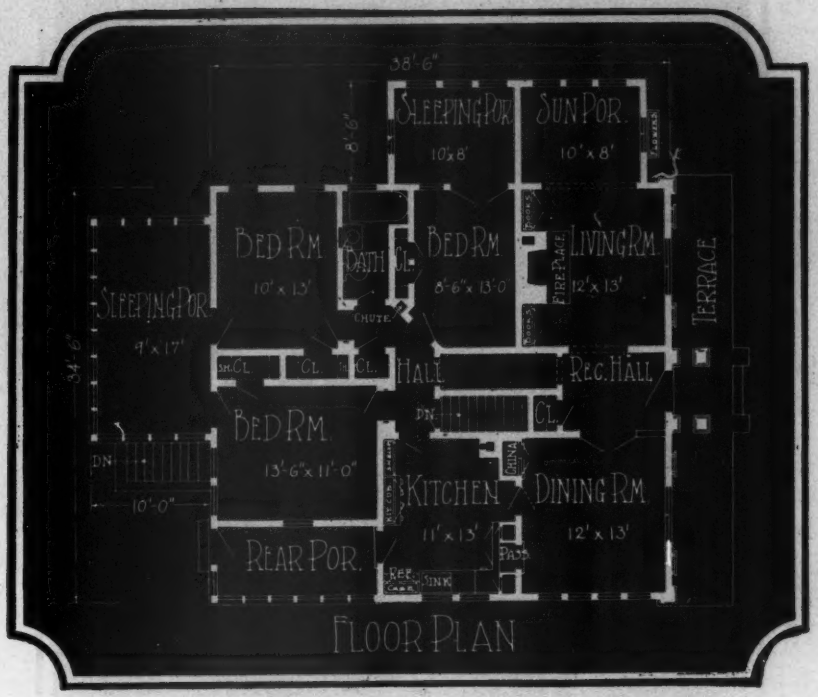
This development has necessitated the revolutionizing of methods of manufacture. Where the early pioneers used crude dome-like kilns for burning their raw materials a modern plant contains huge rotary kilns—steel brick-lined cylinders that may weigh as much as eight Pullman cars each. One of these great modern kilns will produce as much clinker in a day as one of the old kilns could turn out in a year. The old-fashioned grinding machinery has been supplanted by a variety of crushers and roll, hammer and ball mills, in which the raw materials and clinker are reduced to a powder finer than flour.

The centennial of the invention of portland cement is an important date in industrial history, and as such will be fittingly observed by various organizations in the building field.



The Garage of Simple Design Can Be "Set Off" and Made Very Much More Attractive by a Proper Trellis Approach.

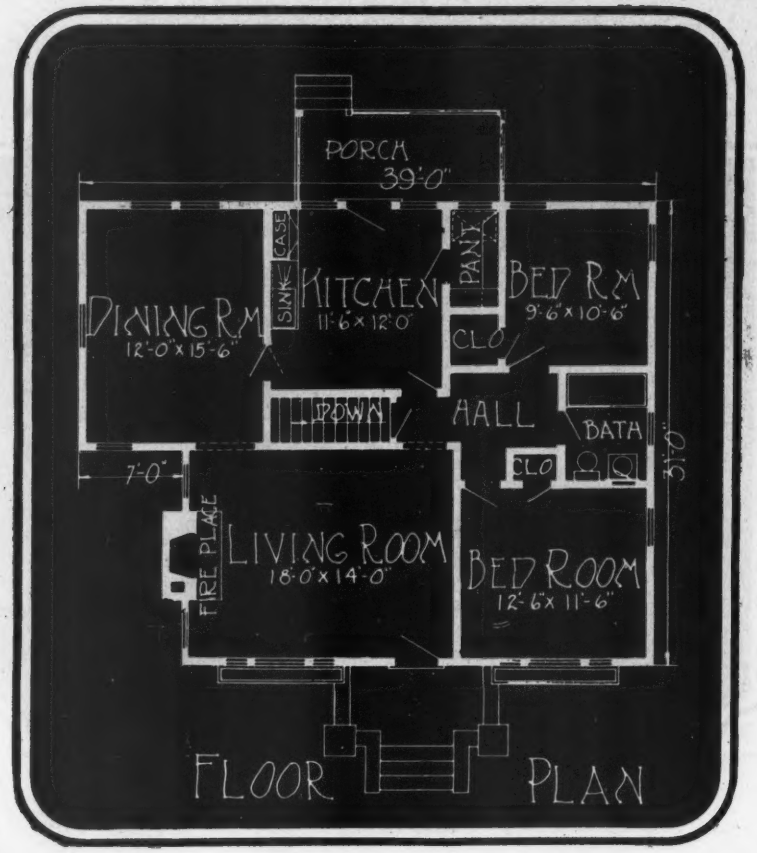
BLUE RIBBON HOMES



HOSPITABLE COLONIAL BUNGALOW. Don't you think there is something especially inviting about this handsome home? It is hard to analyze it, but considering that this is merely a simple design, with no extraordinary amount of frills and frolls, we must conclude that we like this because it is just what it pretends to be—a fair-sized, hospitable-looking house, built for comfort-loving folks. You need a wide lot for this house. Note that it is 43 feet wide, and 48 feet 6 inches deep. The porches are integral with the house design, so we will include the four of them in counting the rooms, ten in all; they will serve a large family nicely. There is ample closet space everywhere, and the kitchen is so well shelved as to eliminate the need for a pantry. Wide Colonial siding, painted white, is proper for this exterior, and the trellises for vines set off the terrace French doors nicely.

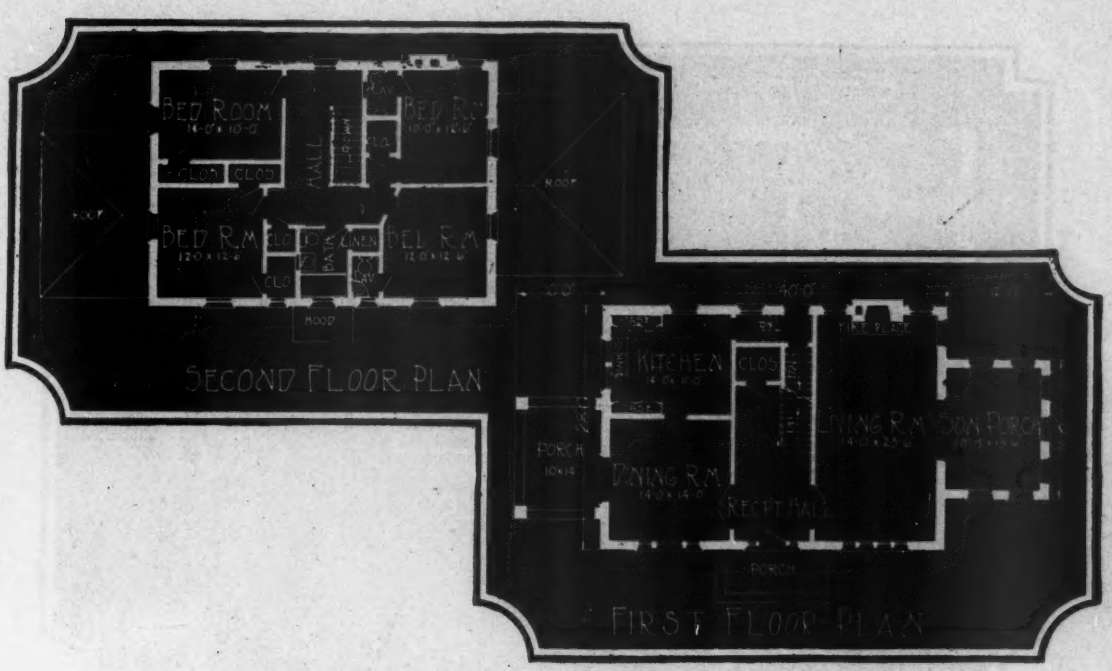
Home Designs That Win

BLUE RIBBON HOMES



A COLONIAL STYLE BUNGALOW. Here is a charming little place of five rooms, which can be inexpensively built, and which radiates home comfort and cleanliness like a Blue Ribbon Home should. There is extra wide clapboarding used for the siding, securing an effect which fits in with this style very well, and the window boxes dress the whole front of the bungalow up immensely. Within the front door we find ourselves in the living room. This is the largest room in the house, and is lighted from the front and the fireplace side. This leaves two nice stretches of wall space to set off the furniture, pictures or floor lamp to advantage. The dining room is off the living room; no reason why there should not be a lot of light from a triple window here, instead of just using one. There are two bedrooms, connecting with bathroom through a hall. Over all dimensions are 39 feet by 31 feet.

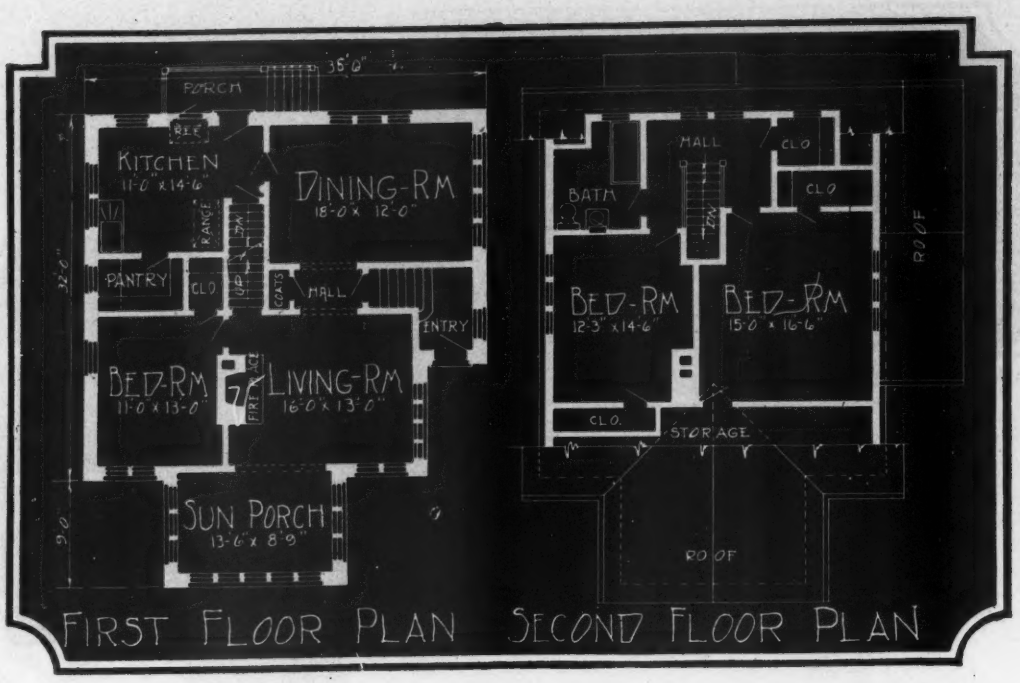
BLUE RIBBON HOMES



A FAULTLESS DESIGN IN WESTERN COLONIAL. This brick residence takes its inspiration from eastern Colonial houses, but its variation from regular Colonial treatment is typically western. Western influence shows in the windows of the first floor, which are of a modern type; also in the porch at the left end and the sun porch at the right end. Western initiative shows also in the marquee hung above the entrance, although the entrance door itself and its sidelights are authentically Colonial. And of course the tile roof, with its smart little finials defining the slopes, differs from the shingles of cedar or slate usually associated with Colonial mansions. The reception hall is very roomy, giving good prominence to a handsome stairway; the living room, dining room, sun porch and kitchen are all amply dimensioned, and there are four bedrooms upstairs, with bath. Over all dimensions are 28 feet by 62 feet.

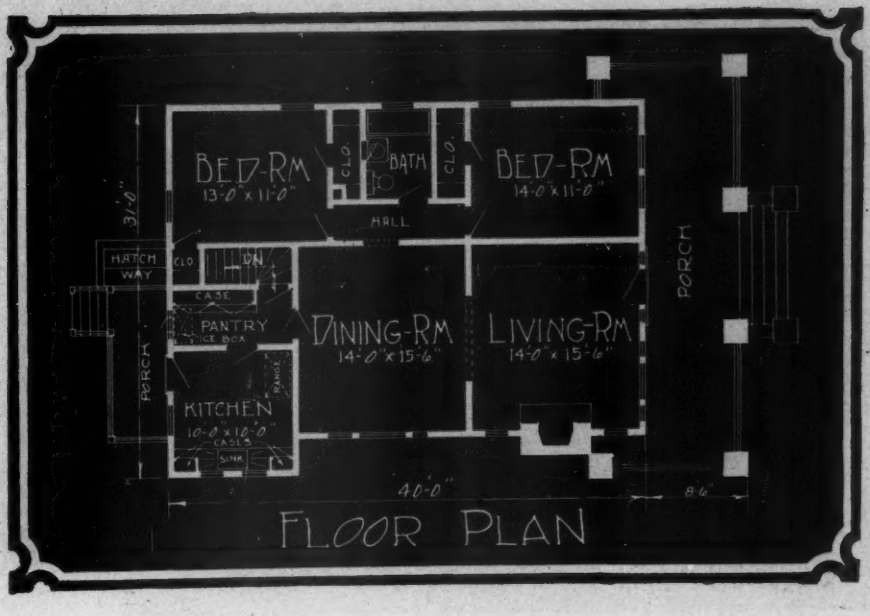
Home Designs That Win

BLUE RIBBON HOMES



PROVING A MAN'S HOUSE HIS CASTLE. We commend this as offering a worthwhile idea to the prospective homeowner in cities: Place your entrance where it offers the least encouragement to unasked callers. This home has its entrance free for the privacy of sun porch and bedroom, and greater expanse for the living room. There are, in addition, a kitchen and dining room, and upstairs are two bedrooms, with bathroom, and ample closet space. This is a type of house that calls for some thoughtful landscaping, as it can easily assume a grim and forbidding appearance unless relieved by the grace of hedges and flower beds. Ivy trained up against the walls would help greatly, and by all means have a fair-sized shade tree or two. The over all dimensions are 36 feet by 41 feet. Although combination brick and stucco, this would look well in all-brick, or all-stucco, as you wish.

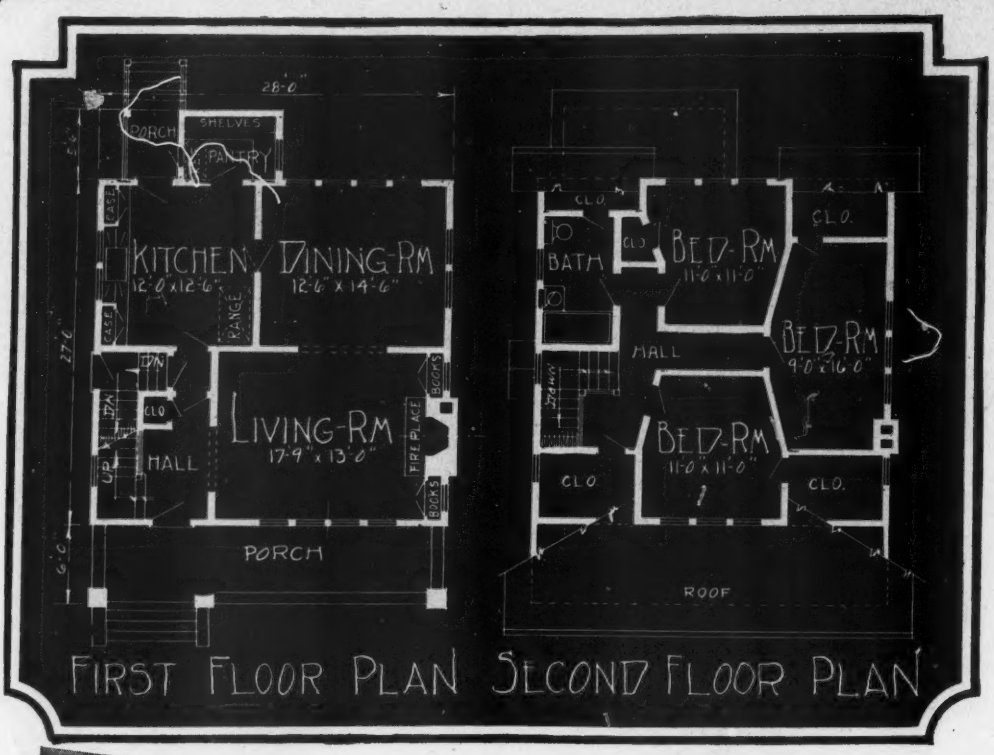
BLUE RIBBON HOMES



AMERICANIZED SWISS CHALET. Over in Switzerland one finds these characteristic roof and bracket details, but whereas there they are brown and old and weatherbeaten, here we can use the same idea, and keep the whole spick and span with pleasant white paint. This bungalow, in its suit of white, with light colored brick for the chimney and porch column supports, and with its rakish eaves, gives a broad, airy impression to the spectator; it seems really bigger than it is. Yet the width is only 31 feet; the depth 40 feet. There are five rooms, and a pantry and bathroom. The living room is entered directly from the front porch, and has a fireplace. A colonnaded double door leads into the dining room, separated from the kitchen by a passage so arranged as to make the serving of the meal easier for the housewife. From the dining room we reach the bathroom and the two bedrooms, and rear enclosed basement stairway.

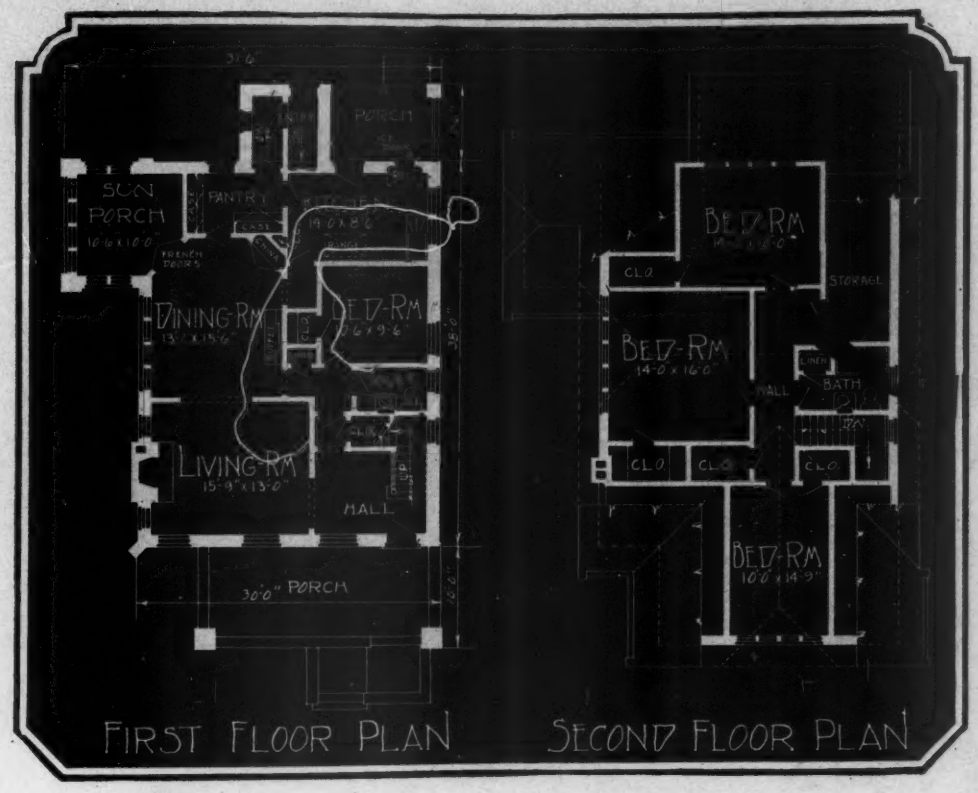
Home Designs That Win

BLUE RIBBON HOMES



STUCCO HOUSE OF ECONOMICAL CONSTRUCTION. There are some good points about this two-story dwelling which can be studied with profit. The foundation and part of the porch are built from boulders, cleared from lots nearby. The stucco wall itself is economical, over block, wood or metal lath, the use of shingles for the dormer and the upper story is economical, and yet makes a siding which looks well and goes nicely with the stucco. We have a house of three rooms downstairs and three bedrooms upstairs, and with an extra room possible downstairs through the glassing in or screening of the porch. The floor plan is good; an entrance hall on the first floor, with the staircase offering a decorative opportunity; hall; entry to the kitchen, and the living room opening into the dining room in a way which lets light flood through the house. There are four closets upstairs, giving ample space, and all the bedrooms are but a few steps from the bathroom. The over all dimensions of the house are 28 feet by 38 feet 6 inches.

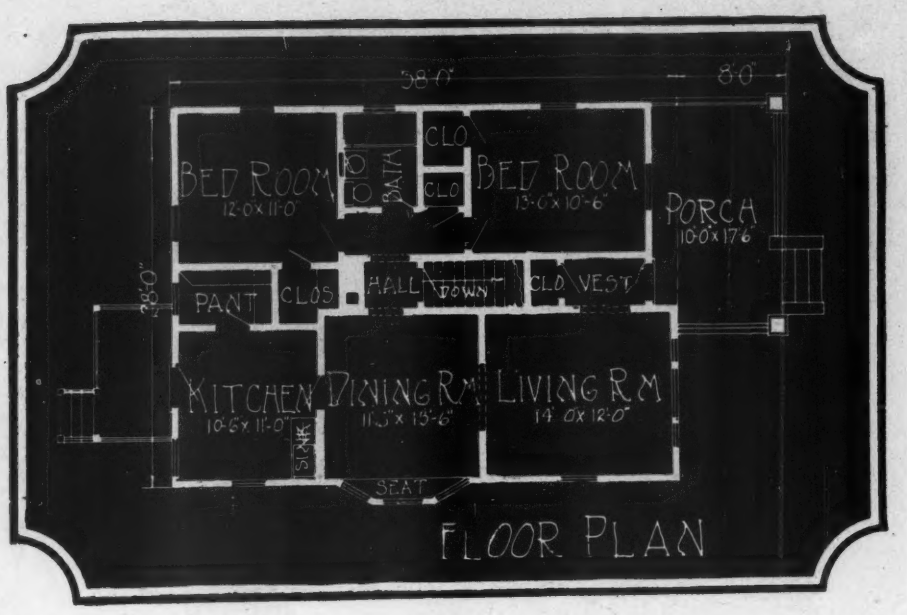
BLUE RIBBON HOMES



A HAPPY COMBINATION OF BRICK AND STUCCO. Aside from its well-balanced, homelike design, with deep, cosy, recessed porch and snubbed gables, this Blue Ribbon Home appeals by reason of its happy combination of brick and stucco. This possesses the advantage of lessening construction costs in localities where either one or the other material may be unduly difficult to secure. Downstairs are five rooms—counting the enclosed sun porch as one room. Upstairs there are three bedrooms, with a storage room, and throughout the entire house ample provision has been made for plentiful closet space. This is a type of house which would appear to the best advantage on a wide lot, and therefore should appeal to those living in the suburbs of cities, as well as in the smaller towns. It is a house which will, as the saying is, "wear well," for its lines are good, and will never be out of fashion.

Home Designs That Win

BLUE RIBBON HOMES



JUST WAITING FOR SOME YOUNG MARRIED COUPLE. Well, certainly not much Colonial or Spanish or Italian or anything else about this! you may say. No, but still you cannot deny it is homelike. Here is a simple unpretentious small house which just sits down and minds its own business, that business being to look like home. Many a young married couple starting out on their first home venture would do well to consider this one's good points. It is not elaborate, yet the construction is sound and good; wood siding, and shingles for the roof and gable portions, unboxed eaves, cement block foundation. The porch is amply dimensioned, and a vestibuled entrance gives into the living room, which, with the bay-windowed dining room and the kitchen, occupy one-half of the house. The two bedrooms and the bathroom occupy the other half, being reached through the hall off the dining room. Over all dimensions are 28 feet by 46 feet.

Is This a Concrete House?

You Must Look Closely to Make Sure This Belmont, Mass., Home Is a Concrete House. It Faithfully Reproduces a Notable Old Wooden House. Bates and Wigglesworth Were the Architects.

By A. J. R. CURTIS

LOOKS are often deceiving and the charming New England house shown in accompanying illustrations is probably entitled to first prize when it comes to concealing its real identity. That it has unusual charm no one will deny; it may justly claim to be of Simon Pure New England architecture, preserving all of the quiet restful dignity for which that type is noted; it is the kind of a house which arouses the builder's curiosity.

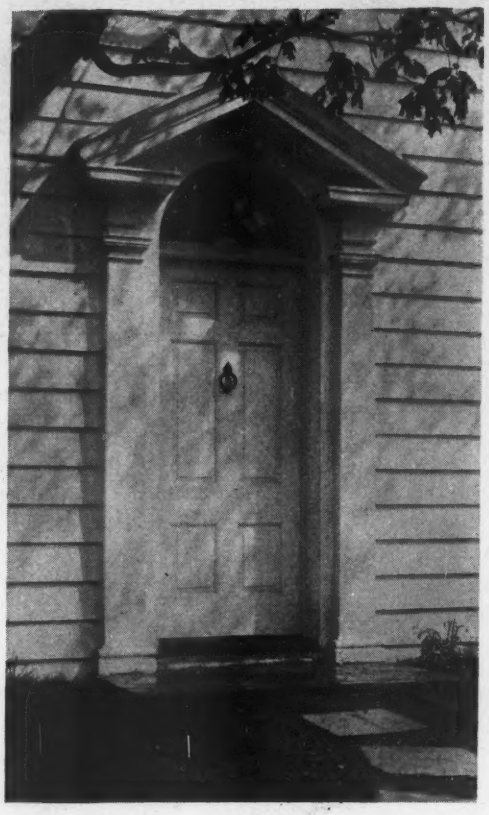
The walls, floors, stairs and even the roof of this residence are of concrete—although one would hardly believe it from the photographs—or even on personal inspection a dozen feet or more from the structure. In fact, almost every detail, even to the cornices, downspouts and gutters, is done in concrete. Bates and Wigglesworth, architects and contractors of Boston, built the house recently according to an operating plan involving the extensive experience of this concern not only in the field of reinforced concrete work but in residence construction as well. "What we have achieved," said Mr. V. H. Wigglesworth, recently, "is a structure which combines architectural beauty with best possible construction, and quality considered, it has been done with an economy which cannot be achieved by any other type."

Most architects who design or build concrete houses strive to find and apply a distinctive and individual treatment which they consider especially well adapted to mass materials like concrete. Many contend that the future still holds the secret of the true architecture of concrete. Not a few believe that each of the great basic materials has its own characteristics and possibilities and therefore its own architectural treatment and that these are not to be passed from one material to another. But Bates and Wigglesworth have well demonstrated that architecture is above material and that there can be no good objection to faithfully reproducing in concrete a good old wood design, in order to perpetuate it in a permanent material.

The house is approximately 30 feet by 40 feet in

principal dimensions. Exterior walls are of hollow construction produced by means of removable cores placed in the forms. The total wall thickness is 12 inches, the outer portion being 5 inches, the inner portion 4 inches and the air space 3 inches thick. Perhaps the most interesting wall detail is the drop siding effect, produced so cleverly that even within the distance of a few feet one could not detect that it is anything but wood.

Decision to use the drop siding effect not only gave pleasing architectural results by producing a succession of horizontal shadows, but it solved a number of practical construction problems at the same time. The horizontal grooves gave opportunity to conceal joints in form work and made it possible to place the concrete in small increments with a small sectional form, at the same time producing a surface that did not require a stucco covering.



The Handsome Side Doorway Has Handwrought Latch, Hinge and Knocker Adapted from Similar Pieces Found in Old New England Houses.

Forms were simple, but naturally had to be very accurately made. They were made in the shape of panels of 2-inch planking, 2 feet high, in the reverse of wood drop siding. Each course, simulating a siding board, is about 8 inches high. These forms were raised after each filling, so that a minimum of form lumber was required. A great deal of special attention was required in forming the very pleasing details. Forms for this purpose had to be most carefully constructed, using reverse mouldings. It may be said, however, that the forms were all extremely simple in conception, perhaps the simplest which have yet been devised to produce a comparable quality of work; the one characteristic absolutely necessary in preparing forms of this kind is the highest class of workmanship.

Floors were placed by more usual methods, using plank forms. The entire doorways were formed and cast at the same time as the first floor and the four columns on the front elevation were poured at one operation, just as the wall work reached the level of the beams carried on the columns. Wall construction proceeded at the rate of about 2 feet in height per day, interior work following closely behind it.

After removal of the forms the exterior wall surfaces were patched with mortar as required and rubbed with carborundum bricks after which they were covered with a white cement coating. The roof was made in a manner similar to the walls, also being of monolithic concrete throughout. Roof forms were used which had been cut to the reverse of slate shingles, and the surface, after patching, was covered with a slate colored coating. Floor surfaces were laid with special attention to obtaining smooth true surfaces which were tinted and squared off so that the effect somewhat resembles tiles.

The structure has a number of extremely interesting details, including hand wrought hardware, a copy of the iron work done by a smith for a house at Sangers, Mass., probably built about 1640. This iron wrought work includes latches, knockers, hinges and lighting fixtures.

Located on a pleasant elevation at the juncture of two roads in the suburban district known as Belmont, less than a dozen miles from Boston, the Wigglesworth house enjoys a setting quite in keeping with its architectural traditions.

✣

AS many people know, the materials going into cement must be ground not once but several times Great rocks from the quarry must be crushed into smaller sizes, these must be reduced to the fineness of sand, and the sand-like particles must be ground finer than flour. Then this "raw mix" is burned.

Side and Rear View of the Belmont, Mass., Concrete House. It reproduces the design of a house formerly in the same vicinity, and which was built in 1640.

A Striking Living Room in a New England Residence. It is a thoroughly modern house, but furnished in keeping with New England traditions. It is one of the rooms in the house illustrated on the two preceding pages.

Overdrape Possibilities

By GRACE FOERTH HUNGER

CHECKED ginghams, which come as low as twenty-five cents a yard, offer endless possibilities as overdrapes. One way to "dress up" these checked ginghams is to outline them with two or three-inch borders of puffed plain gingham, having the valance of the solid color also. Or narrow ruffles of plain material as a trimming for the checked curtains is always good. Sometimes a double ruffle, one of the solid color and one of the checked, makes an interesting change.

I decorated a Colonial bedroom furnished with genuine heirlooms, which pleases everyone who sees it. The furniture, to be sure, is mahogany, the plain plaster walls a rich cream, the rug a braided oval rag rug, made by hand with rags of blue, yellow and black, having a six inch border in solid old blue. There were three separate windows, all of them on the street level, so to insure privacy from without and a view of the outdoors from within, I used for glass curtains, hanging them straight together, ivory organdy of a crispness that was positively saucy. Because the window was rather low I omitted a valance and for overdrapes utilized a blue and white checked gingham, with full ruffled edges of the same material about four inches wide, held back by large bold splashy bows of the crisp ivory organdy. The wooden pole, from which the gingham drapes were suspended, I also covered with gingham so as to furnish a continuous line of color across the top. You just can't resist a smile when you look at those windows—they are so reminiscent of a prim little miss all dressed up in her crinolines.

I cannot imagine a more striking bedroom than one I saw in New England where the windows were equipped with such window shades. The room was done in cream, yellow, gray and cornflower blue. The walls were a soft cream, the rug blue with a yellow striped border, and the furniture a quiet gray. In the center of each drawer of the gray chest of drawers was painted a prim little garland of cornflowers in blue and green and a darker gray, repeating the colors in the chintz of the window shades The writing table, which was nothing more than a small kitchen table painted gray like the chest and covered with a plate glass, had the center of its drawer similarly garlanded, and the little desk chair, its seat upholstered with the chintz, rejoiced, in a similar adornment. The curtains were of soft gray theatrical gauze, hand hemstitched in yellow, hung in straight folds from rings on a pole which were operated by a pulley which permitted them to be drawn across the window at night. I have never seen anything so elusive, in the lamplight, as the luminous colors of the shiny chintz peeping through the mist-like gray curtains.

Chintz, after all, possesses more decorative value than almost any other material with plain walls, and there is some of the imported variety, accurate reproductions of the early eighteenth century, which are as costly as brocades or velvet and quite as appropriate and sometimes more beautiful for formal rooms. The better shops carry a line of chintzes having fantastic little Chinese figures, around whose colors one may build the most charming rooms. And then, of course, we have with us always the piquant French *toiles de Jouy* which are fetching in bedrooms.

When We A-Gardening Go

Mother Nature is a Wonderful Helper of Those Who Help Themselves to Her Treasury of Earth and Air and Water. She Even Furnishes the Seeds

By FREDERICK TATE

WHO would be without a garden, when a packet of seeds costing less than a dollar can transform black earth into that magical carpet—a flower garden!

In this case we can paraphrase an old axiom. Mother Nature surely helps willingly all who help themselves. It is, paradoxically, not a case of helping ourselves and ending there; it is a case of helping ourselves to what she has to offer. And she is never so lavish of her treasure as when she begins with us to make a garden.

No Lot Too Small

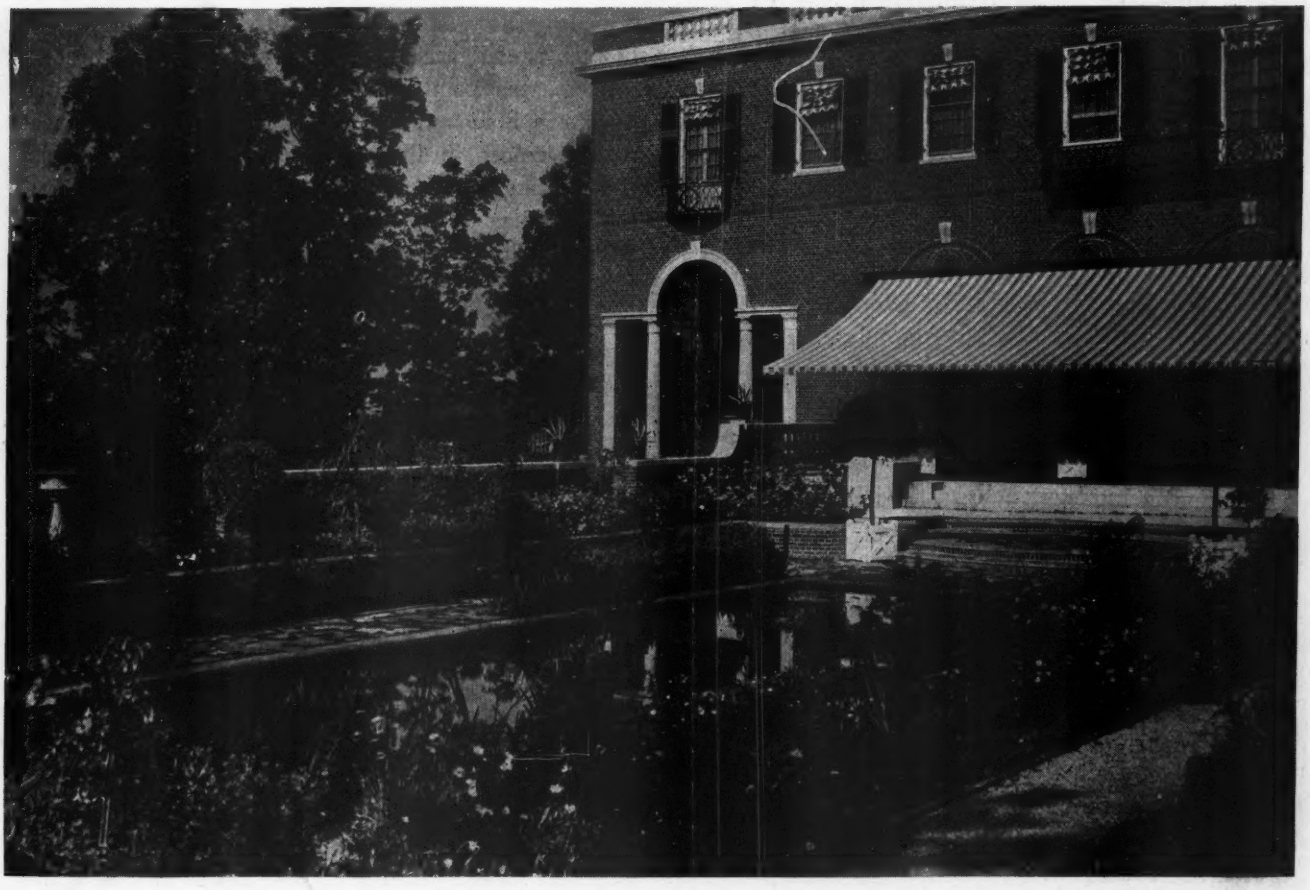
Suppose we begin with the small lot. I have seen a perfect little garden in a space five feet by five feet. But this was in Japan, where finesse in gardening goes to microscopic degrees. I would say that on a typical narrow city lot a thoroughly practical and perfect small garden could be obtainable within an area twenty feet by twenty feet square.

Suppose we consider such a garden. Let us raise part of it—about six feet of it—making the raised portion about a foot higher than the other level of the garden. See what we have done? We have created a false horizon; already our garden seems deeper than it is.

Elements of Garden Architecture

There are three elements of garden architecture all know—beds, paths and ornament. The fourth element, equally important, is often neglected—water. A pool of water in a small garden does for it what a mirror does for a small room—its reflecting capacity makes the garden seem larger, to say nothing of the continual play of color and light and shadow from the foliage, the flowers, and the wind, and the clouds and the sky above.

In a small garden it is best to keep the height of all the plantings low. Buy your shrubs of a good tree nursery and let them grow well, then trim low. The barberry makes a good hedge; the dwarf forms of the broad-leaved evergreens, the azalea, the rhododendron, the Japanese holly, and catoneasters help to keep the



A Good Example of the Formal Garden Layout, But With Informal Plantings. Observe how ornamental stone is used to good effect. The flagstone walk opposite the pool has in-between plantings of moss pink and saxifrage.

A Garden Is An Intimate Affair. Size is not an essential, but proper arrangement is. This is what one householder did with the rear of a narrow lot.

beds from having too scrawny an appearance. The smallest garden should have a seat, a sun dial or a fountain figure, and in the latter case you give yourself an opportunity for having water lilies. The yellow pond lily, or Spatter Dock; the Star Maiden, or white lotus; or, in the South and extreme West, the fragrant yellow hybrids developed from the Mexican variety fit in excellently here. Do not, please, put gold fish in your garden pool. They are decorative, but some prowling Thomas cat will work to their disaster.

In the small garden, as in the large, one tries to plan a complete change of plants throughout the blooming season. Thus, one begins with bulbs, followed with such an early bloomer as the columbine. July can see the small garden a vision of blue from ageratum, heliotrope, verbena, bachelor's button, blue sage, larkspur, Veronica, blue bells and forget-me-not.

The Walks Make the Border

Gone are the days—we hope beyond recall—when broken bricks and clam shells or bottles bordered the garden. Now we use flagstones, or brick, patching them together loosely, and planting the in-between places with moss pink or saxifrage. If our lot ends against another building, or against an unsightly alley, we have an opportunity to silhouette our tiny garden against lattices or a wall on which ivy has been let grow. And the advent of the motor car permits us to travel so conveniently it is a poor tourist who cannot plan on bringing back from autumn Sunday journeyings sufficient of the wild deciduous shrubs and ferns to make the planting of a shady wall spot an easy problem.

Color Harmony

Perhaps you have considered Mr. Bullfrog as good for nothing but pickerel bait; or, if he is larger, for a nice mess of frog legs. Study him well the next time you catch his slippery majesty. His green and mauve and brown and pearly white give you the most gorgeous and cool interior decorating suggestion you ever saw.

No yellow satin can equal the cowslip; no green is quite like its green leaves. Combine the two and you have the proper caper for summer porch in wicker. Look at the flowers in your own garden; at the butterflies above them. See the use Nature makes of blues and purples to enrich shadows. Try to study her scheme of things and you will never want for a color scheme or idea.

A Garden Pool, Like a Mirror in a Room, Makes the Garden Seem Larger. Aquatic plants give a riot of flowers and foliage, anywhere, with little effort.

Advertising—and the Builder

Good Advertising Suggestions Builders and Contractors Can Follow at a Profit, and Without Exorbitant Outlay

By J. STUART MARLOWE

THERE is, perhaps, no industrial group in the United States which derives the benefit of so many business building forces, or of so much advertising, as the building industry and its allied trades.

Advertising, in terms of influence, may well be called "The delivery of favorable mental impressions," and as a rule it may be said that the more mental impressions delivered, and the better, the greater will be its results. On every hand, from all sorts and kinds of unrelated sources, the building trades receive the benefit of an ever-increasing, ever-broadening public consciousness of better building standards.

The major part of the awakening of this public consciousness has been accomplished by the builders themselves, together with the building supply dealers, who have appreciated the old Japanese proverb, "A strong picture is the shortest route between two minds," and have consistently used illustrations of well designed and attractive homes in their advertising.

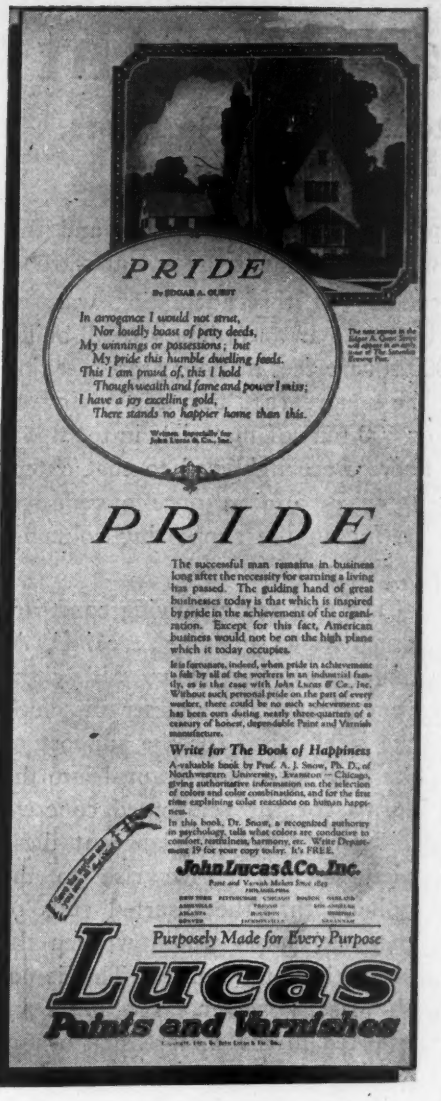
The secondary part—but by no means least in importance—in the gradual education of the American public to better building standards—has been carried on almost unconsciously by trade groups in almost entirely unrelated fields.

An Advertisement Run by a Lumber Company, but Which Might Be Used with Profit by Any Home Builder.

This Is Good Collective Advertising, Wherein Interested Businesses Combine to Advertise Home Building to Citizens.

We pick up a current issue of our favorite magazine, and almost without exception we will find an amazingly huge percentage of the total advertising space devoted to illustrations that have a distinct architectural setting. We find coffee advertised with an illustration of a cozy breakfast room—linoleum on the floor of a well designed kitchen—a piano in a room which sets off French windows to the best advantage—an automobile before an attractive bungalow, and so on, page after page, each one, while primarily designed to sell an entirely different product or service, adding its impulse to the general public consciousness, the general widespread desire, for better homes.

Publications of all sorts have also contributed editorially to the creation of the desire for better homes. Stanford White, in speaking of Edward Bok and his "Ladies' Home Journal" houses, said, "I firmly believe that Edward Bok



The Above Advertisements Typify Two Kinds of Advertising, the Subjective and the Objective. The Lucas advertisement suggests the pride of home ownership; the McClatchy advertisement suggests the actual physical ease and comfort enjoyed by a buyer of McClatchy-Built Homes.

has more completely influenced American domestic architecture for the better than any other man of this generation."

The advertising pages of the leading building trade journals are sufficient evidence that the manufacturers and producers of building materials have taken hold of the problem and taken hold intelligently. From sporadic advertisements that were a matter of purely secondary importance their campaigns have grown to a matter of prime importance. They are as carefully planned and as fully deliberated upon as their problem of financing. Formerly a department of endeavor that had no real place in their business structure, they are now an integral and vital part of every merchandising effort.

The problem of the manufacturer or dealer in building materials who has a national field of distribution is comparatively simple as regards media. Through the trade journals he can reach practically every builder in the country, and the merchandising and advertising service departments of the trade press can give him almost invaluable assistance, but the problem of the local dealer is more complicated. He has to identify himself locally, with the widespread national demand—tie his name up with the "Better Building" and "Better Home" idea that has been created and built through all these mediums, and from all these sources, in his own community.

Advertising is no longer confronted with the question, "Does it pay?" Now the question is before the individual dealer, and is, "How much can I make it pay?"

If you will consider any kind of advertising you may do as a *personal letter from you to your prospect* you can write a good advertisement of your business. It will pay, no matter which mediums you use.

In the average community of more than 25,000 population there are seven mediums which the local builder may choose from in his advertising. They are:

1. Street car cards.
2. Newspapers.
3. Direct by mail letters, etc.
4. Billboards.
5. Calendars.
6. Blotters, etc.
7. The theaters.

The choice of media will, of course, be governed by the special conditions which govern the builder's business, but in general it may be said that the first two mediums may be reasonably expected to give greater yield, greater sales influence, in proportion to the amount of money that their use requires.

Steel Joists Lower Dead Weight

Use of Steel Joists Means Considerable Saving in Material Tonnage in Floors, Columns, Beams and Footings

THE low dead-weight flour construction achieved with steel joists, metal lath and a thin concrete slab, formerly available only for buildings with main frames of rolled structural steel, has lately been utilized to advantage by designers of buildings using heavy reinforced concrete columns and beams.

For a long time it was believed that steel joists could only be used as support for floor slabs where end bearing for the joists could be secured either on masonry walls or on structural steel I-beams. Where a building was to be framed with reinforced concrete columns and beams it was thought no satisfactory anchorage in the beams had been devised, and naturally it would be next to impossible to clip or tie the joists to the top of a reinforced concrete T-beam, for instance.

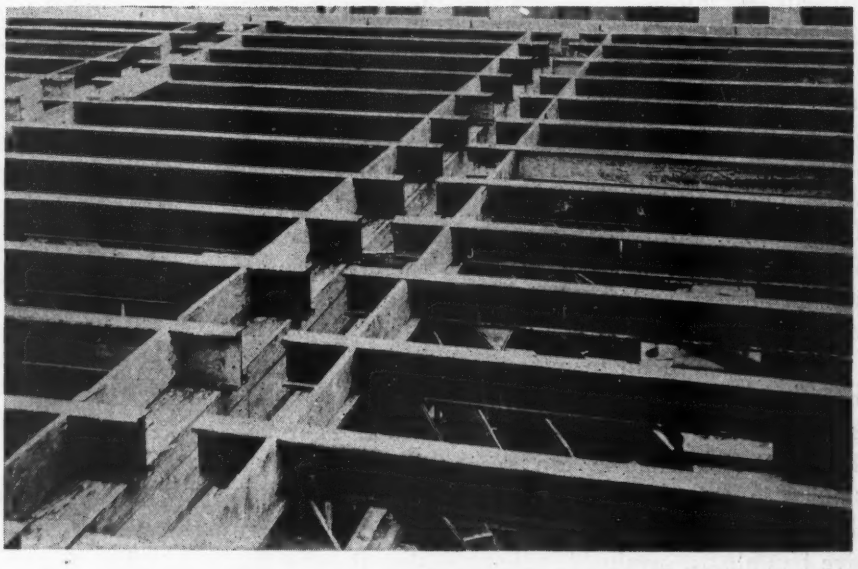
All of these misgivings have been set at rest, however, and during 1922 a large number of buildings with reinforced concrete columns and beams made use of the steel joist floor slab weighing from 35 pounds to 40 pounds per square foot in place of the other types of fireproof slabs formerly used in such buildings, some of which weigh over 100 pounds to the square foot and the lightest of which weighs 70 pounds to the square foot.

The general economy of this adaptation was, of course, at once evidenced. In an ordinary small building with, say 30,000 square feet of floor area, a saving of 40 pounds to the square foot meant a saving of 1,200,000 pounds or 600 tons of materials in the floors alone, and when floors were lightened to that extent there is also at once a reflected saving in the supporting columns, beams and footings.

This Shows the Manner in Which Steel Joints for the Support of the Floor Slab Were Framed Into the Forms for the Reinforced Concrete T Beams. The resulting advantage is low dead-weight floor construction. The building shown is the Hagerstown, Md., Y. M. C. A.

The two accompanying constructional views of the Y. M. C. A. building at Hagerstown, Md., show very clearly the manner in which the steel joists for the support of the floor slab were framed into the forms for the reinforced concrete T-beams. A first glance at these pictures might give rise to the opinion that the inserted ends of the steel joists would weaken the strength of the beams. This is not the case, however. The joists are inserted in the compression or top side of the beams and the tension or bottom side of the beams are left absolutely solid except for the regular reinforcing bars.

Following the practice shown in



A First Glance Would Seem to Suggest That the Inserted Ends of the Steel Joists Would Weaken the Strength of the Beams. This is not the case, however. The joists are inserted in the compression or top side only; the bottom side of the beams is left solid.

these pictures, the joists are given good broad bearing and are also well anchored in the beams. The forms for the beams are built up in the usual way with the one exception that the side boards for the ends of the beam flanges are sawed to fit between the joists. It is also necessary to bevel these side boards to accommodate the lips of the joist flanges.

Many small buildings, such as stores, apartment houses and such were built during 1922 in line with this practice, and a view accompanies this article of one such, a hospital building at St. Louis, Mo.

In all localities where reinforced concrete construction can be economically handled, still greater savings can usually be attained by the use of floor slabs supported by steel joists, and this extra saving is especially pronounced where the light weight of the steel joist slab is taken into consideration when the footings, columns and beams are designed.

This economy, of course, refers only to such buildings as are usually spoken of as "light occupancy" buildings. By light occupancy is meant buildings where the live floor load to be carried does not exceed about 150 pounds to the square foot. This class of buildings includes apartments, flats, hotels, hospitals, schools, office buildings, most store buildings, etc. For warehouses and factory buildings where the live floor load to be carried is 250 pounds to the square foot and more, the efficiency of the steel joist supported floor slab is lost.

The low dead weight of the steel joist supported slab will be seen from the fact that an 8-inch steel joist weighing 6 1/10 pounds to the lineal foot and spaced 19 inches on centers, will support a floor load of 126 pounds to the square foot on a span of 15 feet. This figure includes the live load and the "dead weight" or actual weight of the floor itself. Eight-inch joists spaced 19 inches will run 3.84 pounds per square foot, or roughly, 3¾ pounds. Where steel joists are used and the concrete slab reinforced by metal lath and spread over the tops of the joists, it is customary to maks the slab only two inches in thickness. The slab then will weigh 24 pounds to the square foot. Thus the total weight of a steel joist floor slab with plastered ceiling will be about 38 pounds per square foot. A floor of this weight, on a 15-foot span will carry itself and a live load of 98 pounds to the square foot.

✣

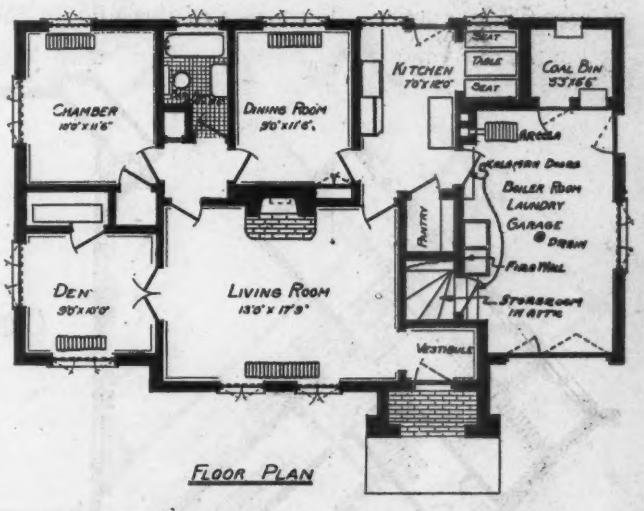
Homer Fireside: They say Englishmen are "Little Islanders"—provincial, y'know.

Gilbert Globetrot: Yes, I met one who thought Colorado was the capital of Maduro!

In the Case of Buildings of "Light Occupancy," Such as Hospitals, Flats, Schools, Office Buildings, Most Store Buildings, Etc., Where the Live Floor Load to Be Carried Does Not Exceed About 150 Pounds to the Square Foot, Great Savings Can Be Attained by the Use of Floor Slabs Supported by Steel Joists. The building shown is the Hospital of the Sisters of St. Mary, St. Louis, Mo.

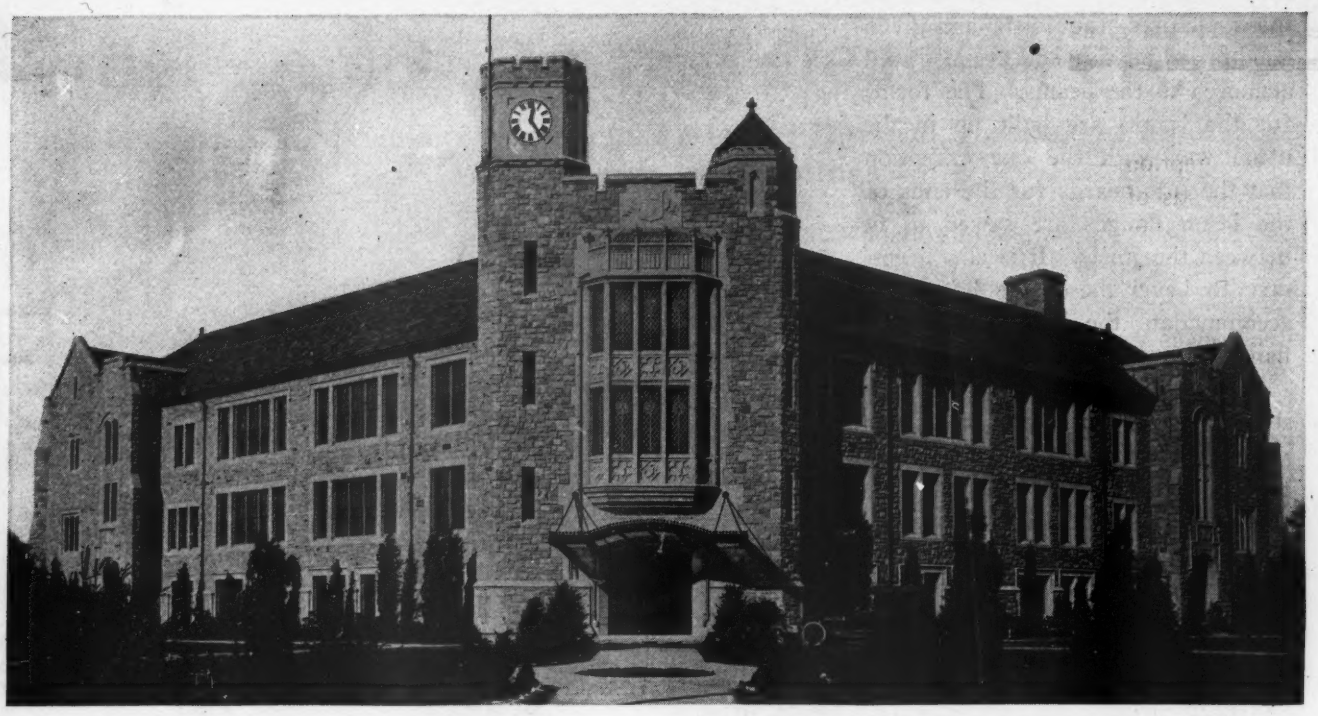
Small House with Unusual Features

HERE is the floor plan and perspective of a small house designed by G. W. Huntington, builder, of Boulder, Colo. It is without basement, but includes all the conveniences of the usual house with basement. He considers it much more desirable.



FLOOR PLAN

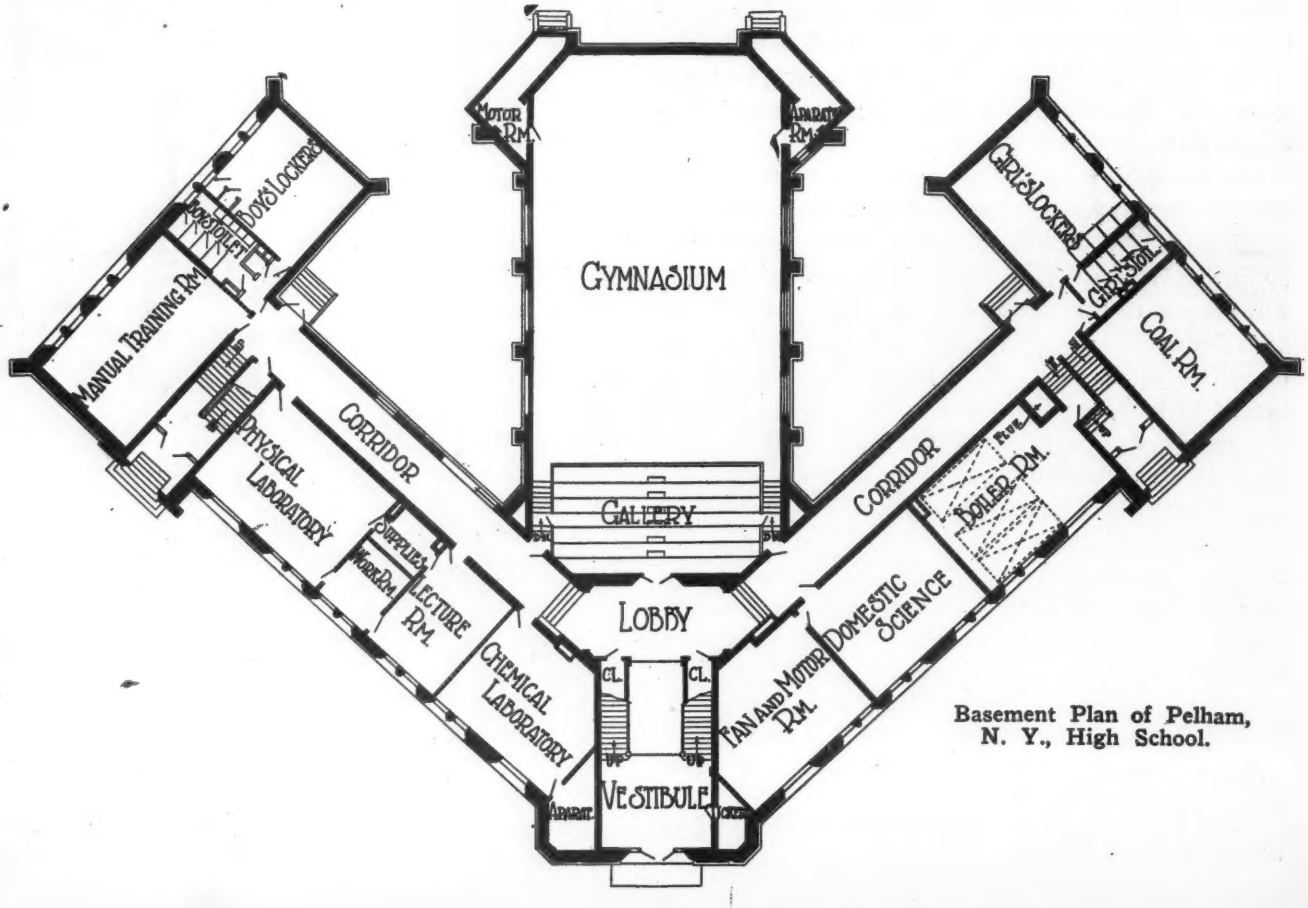
Perspective Sketch and Floor Plan of Spanish Type Bungalow with Built-In Garage.



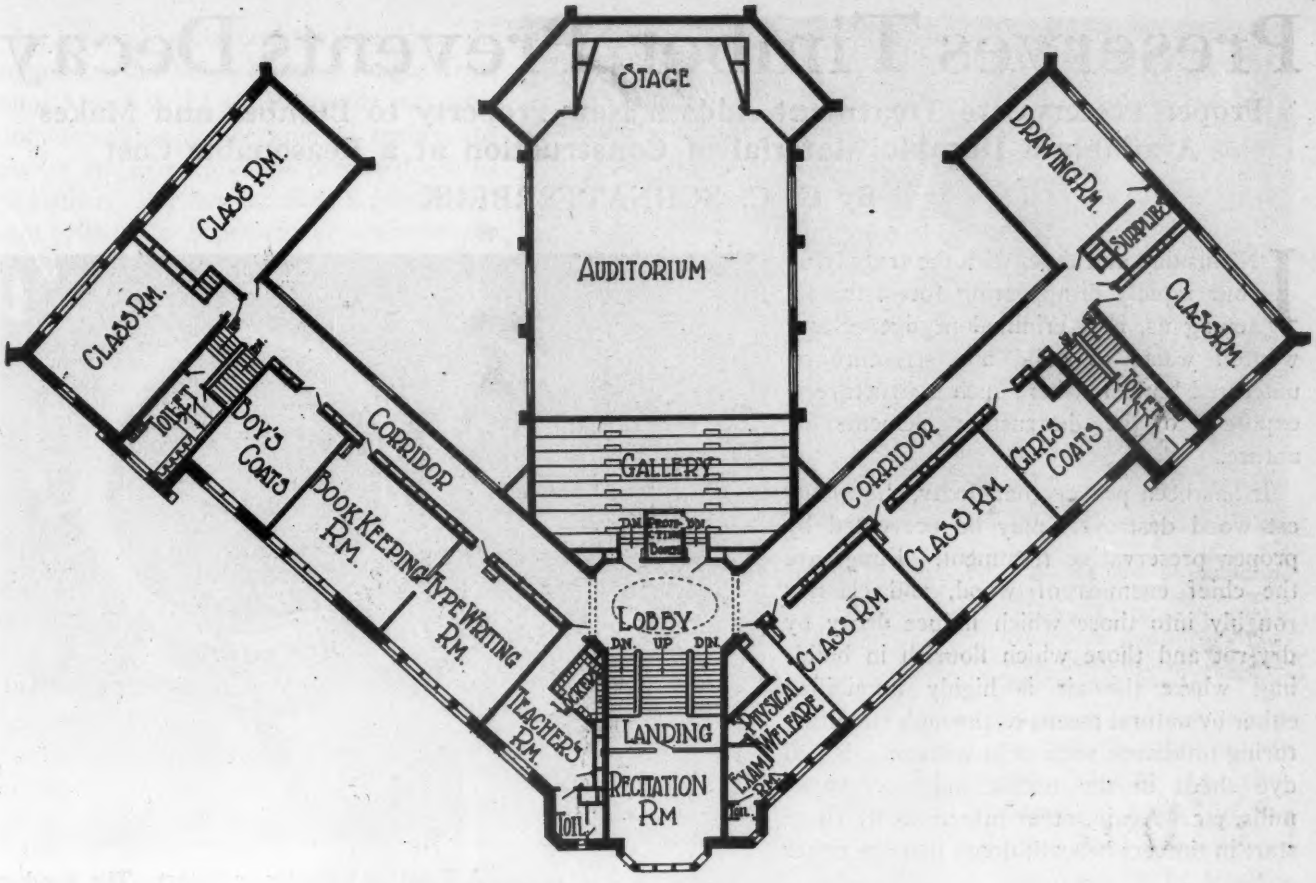
The Broken Ashlar Stone Exterior of the Pelham, N. Y., School Is Well Suited to Its Tudor Gothic Architecture. Tooker & Marsh, Architects.

Pelham High School, Pelham, N. Y.

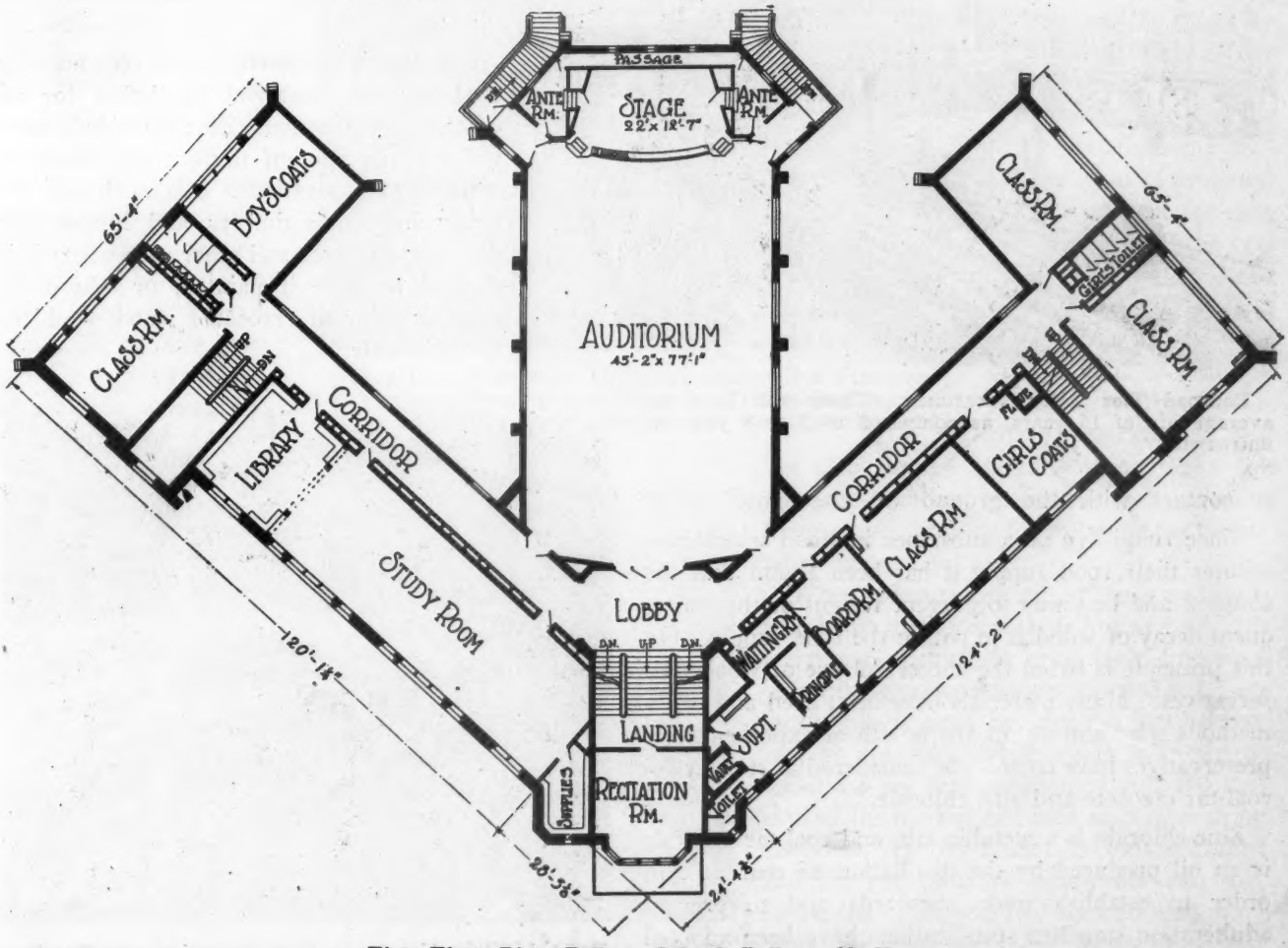
NOTABLE for its plan, which is calculated to give the greatest amount of air and light on all sides of the structure, the Pelham High School, Pelham, N. Y., accords well with modern ideas of school construction. It consists of three floors, the front and main wings being given over to class rooms, study rooms, offices and laboratories, while the center wing has a gymnasium on the basement level and an auditorium above. Tooker & Marsh, New York, were the architects.



Basement Plan of Pelham, N. Y., High School.



Second Floor Plan, Pelham School, Pelham, N. Y.



First Floor Plan, Pelham School, Pelham, N. Y.

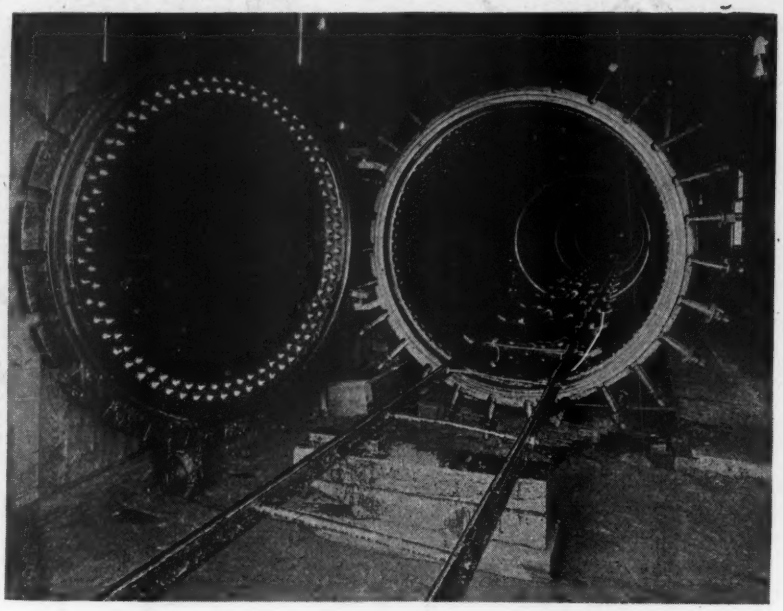
Preserves Timber, Prevents Decay

Proper Preservative Treatment Adds a New Property to Lumber and Makes Available a Durable Material of Construction at a Reasonable Cost

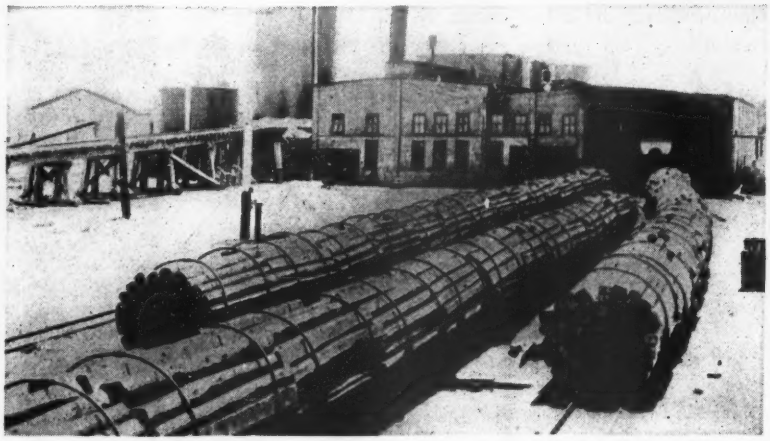
By C. C. SCHNATTERBECK

IN this day and time, with the tragedy of our rapidly disappearing forest threatening us, it is criminal negligence and wanton waste to build any structure of untreated lumber, where such a structure is exposed to the destructive elements of nature.

It has been proven that decay, the greatest wood destroyer, may be prevented by proper preservative treatment. Fungi are the chief enemies of wood, and classify roughly into those which induce decay by dry-rot and those which flourish in buildings where the air is highly humidified either by natural means or through manufacturing processes, such as in weave sheds and dye sheds in the textile industry, paper mills, etc. Again, other infections by fungi start in timbers beneath floors that are either in contact with the ground or else close to it.



A Treating Cylinder or Retort. The wood to be treated is loaded on a tram car, run in one of these, the door shut, and preservative forced into the wood by means of pressure.



Railroad Ties After Treatment. These will have an average life of 15 years, as compared to 5 to 8 years if untreated.

Since fungi live on a substance in wood which constitutes their food supply it has been found that the simplest and best way to prevent fungus or the consequent decay of wood is to poison the food supply. On this principle is based the successful use of wood preservatives. Many materials have been used and many methods tried and out of the wealth of experience two preservatives have come to be considered as standard—coal-tar creosote and zinc chloride.

Zinc chloride is a metallic salt, and coal-tar creosote is an oil produced by the distillation of coal-tar. In order to establish trade standards and to prevent adulteration standard specifications have been adopted and are used by most purchasers of creosote or zinc chloride.

Creosote is successfully and economically used for the treatment of timber for all types of construction. Zinc chloride is used for the treatment of timbers not placed in extremely wet locations. It is much used for preserving mine timbers and lumber for dwelling purposes and other uses where it is desired to have it painted, or where the odor or color of creosoted wood would be objectionable.

Treated Piling Necessary Here to Defeat the Ruthless Marine Borer.

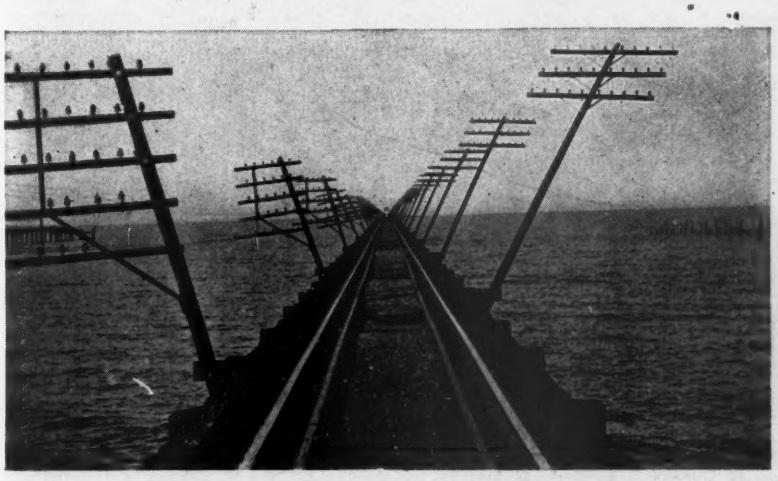
In treating with coal-tar creosote, the amount of the latter injected ranges from about 5 or 6 to 22 or 24 pounds per cubic foot, depending on the kind of timber, the process employed and the proposed use of the timber. For dry interiors a good treatment with 6 to 8 pounds of creosote per cubic foot is common practice, while 8 to 15 pounds of creosote is generally used for sill timbers, highway and railway bridge timbers, piling, and timbers in contact with the ground. In treating with zinc chloride it is standard practice to inject about ½ pound of dry zinc chloride per cubic foot of timber. If a mixture of zinc chloride and creosote is used the required absorption is ½ pound of zinc chloride and about 3 pounds of creosote per cubic foot.

A Modern Manufacturing Plant Floored with Treated Wood Block. Noiseless, healthful, dustless, durable, and economical in every way.

To be effective, the preservative must penetrate the wood, and the commercial treatment of wood is accomplished by the use of pressure. Impregnation under pressure is the most satisfactory means of injecting preservatives into wood, and while the various processes differ in details, the general principle is the same in all cases.

A wood preserving plant consists principally of one or more treating cylinders or retorts 6 to 9 feet in diameter and about 120 to 150 feet long, and capable of withstanding a working pressure of 125 to 200 pounds to the square inch. Inside the cylinders is a track for the tram cars which carry the wood to be treated. These cars, loaded, are handled in trains and are shoved into the retort by small locomotives. The cylinder door is then closed and the preservative forced into the timber by means of pressure. After treatment the cars are removed and the material loaded for shipment. The treating cylinders are provided with heating coils to heat the preservative, thus facilitating penetration. There are also storage and measuring tanks for the preservative, pressure and vacuum pumps, and facilities for steaming the timber when necessary.

There Is a Practically Universal Market for Preserved Sill Timbers, Flooring and Fencing. This treated lumber is now obtainable from most of the manufacturers and retailers.

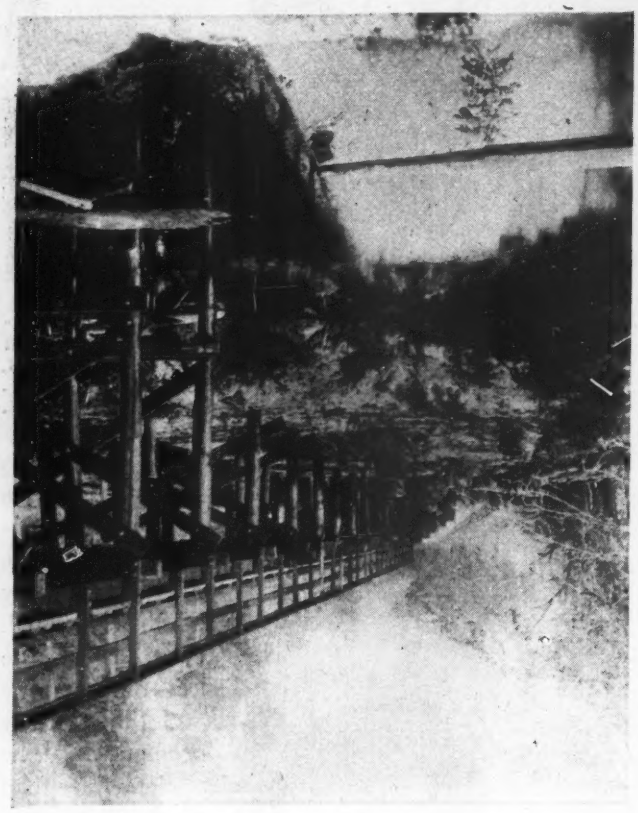


Lake Pontchartrain Bridge, One of the Oldest Creosoted Timber structures in the U. S., in Good Condition After 40 Years: 1882-1923.

When pressure treated timber is not available home methods such as hot or cold bath treatment, soaking in open tank, brushing, or spraying are sometimes resorted to. Creosote only is used by dipping, brush-treating, or spraying, while either creosote or about a 5 per cent solution of zinc chloride is used for the hot and cold bath or soaking methods. If the timber is well seasoned and the non-pressure treatments carefully made, the additional life secured well warrants the expense. To obtain the best results, however, the preservative must pen-

etrate the wood, and this is best secured by pressure methods of treating

Properly applied, the preservative treatment gives an added life of many times that of untreated wood depending upon the species and its use. Railroad ties when well treated have an average life of 15 or more years, under heavy traffic, and generally fail because



Creosoted Timber Highway Bridges Offer Permanence at Low Cost and Can Be Altered to Meet Changing Traffic Requirements.

of wear rather than decay. Untreated ties have an average service life of probably 5 to 8 years. Mine timbers treated with zinc chloride or with creosote are sound after 14 years' service where the life of untreated timber varies from 2 to 3 years. Creosoted piling is in good condition in sea water after 20 years' service, despite the fact that marine borers in the same locality destroy untreated piling in 1 to 2 years. Treated poles and posts are in good condition after 30 to 40 years' service; treated timber highway bridges are free from decay and in good condition after 20 or more years of service, compared with a considerably shorter life for untreated timber.

Railroads and municipalities have for many years used treated timber as an insurance against decay. Treated ties, treated posts along rights of way, treated crossing plank, creosoted wood blocks for city intersections, creosoted timber barges or lighters, treated wood for stock pens, treated timber bulkheads, creosoted water tanks, culverts, coal docks, piles for bridges, piers and other foundation purposes are but a few of the money-saving uses railroads and municipalities have found for treated wood.

Treated lumber is a valuable economic asset because, unlike other types of permanent construction the treated timber structure may be widened, altered, strengthened and lengthened at will, without any loss of material or waste, and at comparatively little expense. On this account it commends itself particularly for bridges and docks. With modern traffic requirements changing daily no one knows what our bridges and docks will be called to bear in the next decade. Treated timber bridges and docks offer one good means of meeting the problem.

The merchandising of treated timber is still in its infancy. Treated timber is obtainable from the manufacturers and a stock is carried by some of the larger retailers. The growing demand for treated lumber is sure to see the smaller as well as the larger distributing yards carrying at least partial stocks of the sizes most in demand. There is a practically universal market for sill timbers, flooring, and fencing, for instance. The farmer sometimes manages to secure his supply of creosoted fence posts by rigging up his own dipping tank, but with education will be persuaded to invest in the longer-lived pressure-treated fence post.

In any event, the education of the public to the use of treated timber has begun and consumers have learned that well-treated timber for construction purposes insures long service, excellent satisfaction, and permanence at low cost. ✣

A Suggestion for Swimming Pools

A CONNECTICUT man who has some original ideas about building has erected on his country estate at the side of the swimming pool a bath house and rest pavilion that is a miniature ferryboat. For a vessel that is called upon to make no trips whatever it is wonderfully complete in all its details. Enough life-preservers are provided to satisfy the most timid voyager. The sturdy funnel with its gay flags lends an air of security.

This Is the Ferry to the Ol' Swimming Pool. It is stationary and can therefore be depended on to be always inside the three-mile limit.

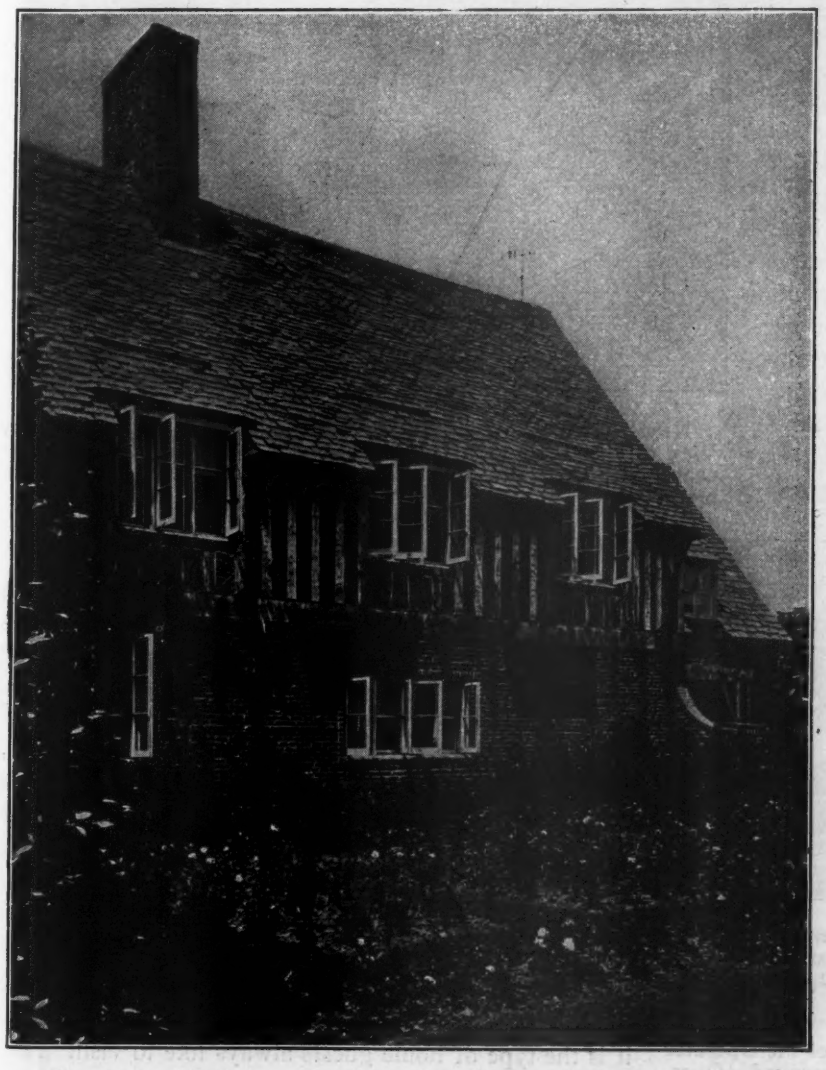
Vogue of Casement Windows

More Than Mere Fashionable Whim Dictates the Revival in Popularity of the Attractive Casement Window, It Gives Better Light, Ventilation and a Touch of Distinction

IT is interesting to delve into building history and find the why and the wherefore of such an important home detail as the window, for instance. Aside from the Spanish occupation and its distinctive legacy in the shape of the modern home of the type favored in the South and West, we have the typically Colonial style of residence favored by the first immigrants along the northern Atlantic seaboard. The Dutch the Plymouth Puritans and the Maryland Pilgrims all have left their impress upon the architecture of the United States, and nowhere is this more evident than in the windows of our houses.

The self-exiled English Puritans arrived from their temporary settlement in the Netherlands with a profound disgust for English architecture and insitutions, and carried with them to their new settlement in the New World a superficial acquaintance with Dutch architecture. They equipped their homes, not with the familiar casement windows of their erstwhile English cottages, but the half-opening slide-up-and-down windows favored by their former

Here the Screen Is Swung Back to Show the Outer Arm and Slide Bar, Which Furnish Rigid, Safe, Locking and Support to the Sash at Any Opening Desired. Note the massive, well-modeled arm.



Casement Windows Complete the Proper Atmosphere for This Delightful Country Place, Reminiscent of the Rambling Country Homes of Elizabethan England.

Dutch neighbors. So today we have the same kind of windows in our homes because, after all, we are creatures of habit and rarely question whether a thing is as it should be.

On the other hand, the Atlantic coast settlers which came from England direct brought along the inclination to duplicate, on a broader scale, the homes and appurtenances thereto to which they had been accustomed in the old country. Many of the first Colonial houses had outswung casement windows like the homes the settlers had left behind in England and the liking for this type of window has persisted through indifferent periods of American architecture. Now, when American architecture is rapidly achieving beauty as well as structural merit of an order characteristic of Colonial days, the casement window is again enjoying the widest popularity. It is as though, given a chance to exercise is own good judgment, the human mind can break away from tradition and habit and make its own choice of what it considers eminently beautiful, as well as most convenient and practicable.

The true casement window is a window that opens out. Windows on pivots, and that slide and fold, naturally fulfill one function of the casement window, in that they give maximum light and ventilation. But the simple type of case-

Vogue of Casement Windows

What an Incomparable Pair Are a Fireplace and a Group of Casement Windows, Each Doing an Equal Part in Making This Room So Altogether Liveable and Likeable.

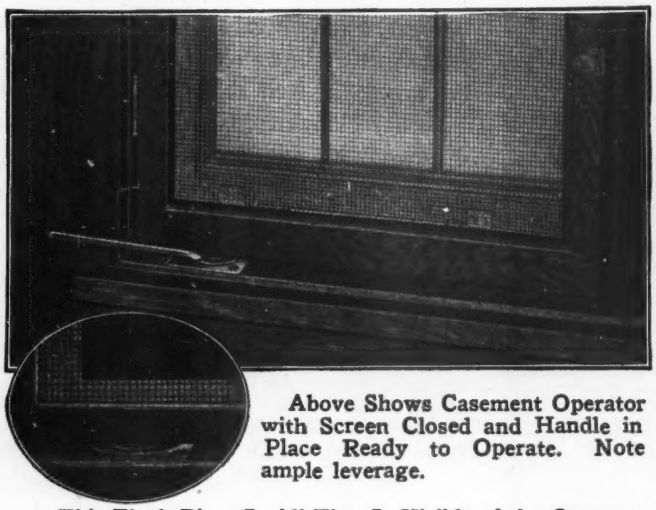
ment window, sometimes called the English, is readily obtainable from any good sash and door mill without special detail, and costs no more than the ordinary slide-up-and-down sash and frames. These casement windows are installed and hung just like doors. No special grooving or other preparation of frames and sash for hangers, tracks or anything of the sort is required. A special feature required is the control which holds the window firmly open or shut, and must be so placed that it can control the sash without disturbing the screens in the summer time. It should be of the simplest possible type, be quick acting, and made well and durably. If well chosen, the outswung windows are held firmly, regardless of wind or weather.

From a ventilation standpoint the casement window appeals; like a sailboat, it may be so arranged to make the most of vagrant, imperceptible breezes which would pass the ordinary window by. By arranging one part of it on an angle the light breeze is taken advantage of and deflected into the house interior.

Formerly it was awkward to have casement windows and screens in the same opening. This has been done away with, for the modern type of out-swung casement window is so designed as to be operated from the inside by a control which extends through below the screen.

Casement windows simplify the curtain-hanging problem and open up many quaint decorative possibilities. They are ideal in bedrooms, since the bedding can be thoroughly aired and the dust and lint of room-cleaning allowed to disappear into the outer air. Being open all the way up there is no upper blanket of warm air on a hot night to cause discomfort; the room ventilates itself thoroughly.

Next Best to Dining Outdoors Is Bringing the Outdoors In, by Way of the Unhampered Full Opening Casement Windows. Because of them what charm, what contentment this room fairly breathes!



Above Shows Casement Operator with Screen Closed and Handle in Place Ready to Operate. Note ample leverage.

This Flush Pivot Is All That Is Visible of the Operator Adjuster When in Operation and Handle Detached. Operator, which is here shown in polished bronze, may be finished to match sills, making it practically indistinguishable from the wood.

A kitchen with casement windows instantly becomes a homey sort of room which makes the kitchen work a pleasure for the occupants, particularly if the windows, as kitchen windows should, open out upon a flower garden—or in the cities, on at least a flower box. Casement windows make each meal in the dining room an event, because unconsciously we associate the quaint with the plentiful. In the living room casement windows justify themselves more than ever, because they help to give a comfortable tone to the furnishings.

But how about the outside? Well, watch the next casement-windowed house you pass by. The outswung windows seem like inviting hands. Instinctively you feel a neighborly interest in that house; no matter how small or inexpensive it is; you feel that it is the type of home guests always like to visit. And after all, what greater gift can a house have for anyone of us than to make us feel at home?

JOHNSON'S WOOD DYE

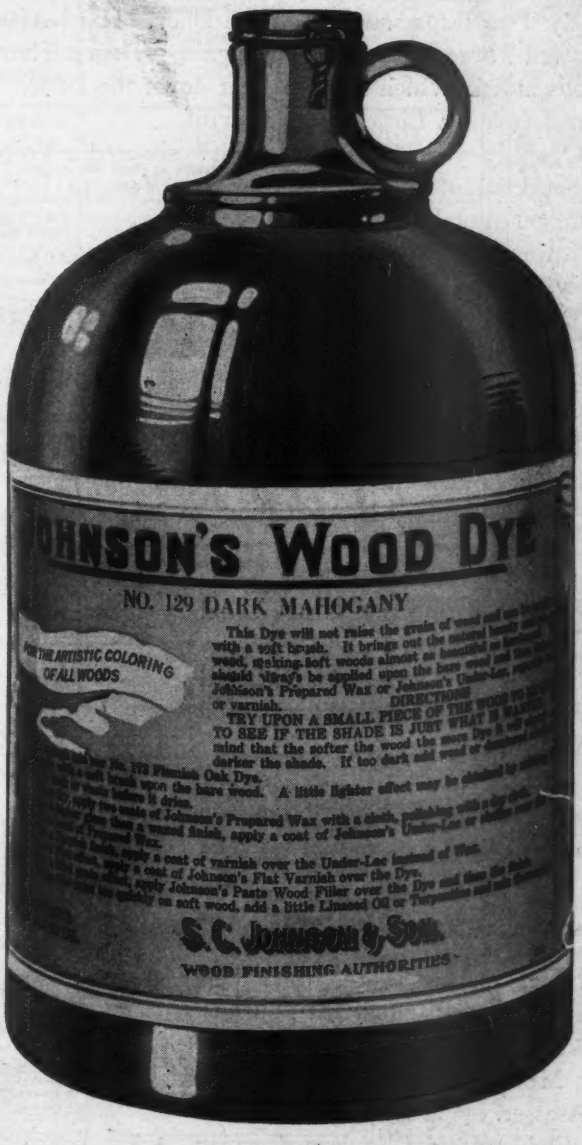
For Artistically Coloring All Wood

JOHNSON'S WOOD DYE is entirely different from the many wood stains and tints on the market. With it inexpensive soft wood such as pine, cypress, fir, birch, etc., may be finished so they are as beautiful and artistic as hardwood. It brings out the beauty of the grain without raising it in the slightest.

Johnson's Wood Dye goes on easily and quickly without a lap or a streak. It dries in four hours and will not rub off or smudge. You will find Johnson's Wood Dye a big help in working out color schemes in stained woods. Johnson's Wood Dye is made in 15 beautiful shades, all of which may be lightened, darkened or intermixed. Full directions on every label.

Johnson's Wood Dye is a ***dye*** in every sense of the word. It contains no finish whatsoever. Like most first class products, it answers one purpose only—it dyes the wood—the finish must be applied over it. We recommend Johnson's Varnishes or Johnson's Polishing Wax for a finish over Johnson's Wood Dye.

Johnson's Wood Dye always run uniform as to color—there is no variation whatsoever.



FREE—This Book on WOOD FINISHING

It's the best book ever published on Artistic Wood Finishing—the work of famous experts—illustrated in color. This book is written for the practical man—it gives covering capacities, includes color charts, etc. We will gladly send it free and postpaid. Use coupon at right.

S. C. JOHNSON & SON, RACINE, WIS.
"The Wood Finishing Authorities"
(Canadian Factory—Brantford)

S. C. JOHNSON & SON, Dept. A-B 3, RACINE, WIS.
"The Wood Finishing Authorities"

Please send me free and postpaid your authoritative Book on Wood Finishing

I usually buy Paints and Varnishes from .....

My Name .....

My Address .....

City and State .....

Parables of Bildad, the Builder

"Hew to the Customer's Scale, Let the Roof Fall Where It May" New Slogan He Coins for Some Fool Diplomacy That Actually Worked Out Right

THE whiles I was Sitting in my Office, wondering if That last Job would Have a Roof strong Enough to Hold a whole North Pole full of Snow that fell the Day before, I heard a Wild knock at the Door. "Ha!" said I, "the Spirits; the Brain Children of Conan Doyle! Maybe they Will Know." So I decided Within me to Ask them. Two Raps would be "Yes!" Three Raps would be "No." Immediately Two Raps sounded on the Door. Hard After followed Three Raps; then Two again,—Then a Thunderous attack Which Like to Beat down the Door. I opened It but a Little space, Fearful.

"Open up, you Half-Baked Idiot!" shouted a Voice. "What kind of a Business Man are You, to Let a Customer wait Like this?"

"I was in Communion with Spirits," I answered, Truly.

"Do tell!" he exclaimed in a Tragic whisper. "Where Do you Get it? Do You Need a Prescription?"

"Nay, Nay, my Friend," I said, "Cease from Jesting. I meant Other Spirits, of the Tin Horn and Table Tip variety. I am in a Quandary; I am Fearful this Snow will bring Down the roof of one of My jobs."

"Your Quandary is As nothing to Mine," said my Bilious Caller. "I am in a Terrible Dilemma, and if I cannot Solve it there Will be a Separation. And where Can I find my Wife's equal for Lemon Cream Pie?"

"You should taste the Frizzled Bees' Knees Fried in Tar which MY wife Frizzles," I said. "But Come, Sir; the Day Wanes, and the Sooty Snicker of Night Draws on apace. What makes You Corrode with Anxiety?"

"Simply this," answered my Batty Prospect, drawing forth a Handkerchief for his Tears, when their Quantity demanded a Turkish towel. "By the untimely Death of my Mother-in-Law we are become Possessed of Twenty feet Frontage on Flabbergastem Boulevard, worth $200 a Foot. By the Terms of the Will we Are required to Build a Dutch Colonial Mansion thereon, to Contain not Less than Sixteen Rooms, that Being the Age my Mother-in-Law, being Insane, considered Herself when She Died. My Wife holds Out for Sixteen Rooms; but I feel that by Installing Wall Beds and Murdering my Four Ugliest children We can Do with ten."

"I will Have to Murder the Whole Family, and Yourself, Too," I thought, "to Get a Dutch Colonial to Fit on a Twenty Foot Frontage. I'll Tell the Cock-Eyed world that Old Dame was insane!" But instead, I diplomatically Asked: "What Is the Depth of the Lot?"

"Sixty Feet," he Groaned. "But I feel We can Get a permit to Extend Part of the Second Story over the Alley, since My wife's Third cousin's Nephew's Brother is kin by Marriage with our Alderman."

Meanwhile I had Secured my Pencil and Scratch Pad and copy of AMERICAN BUILDER, and Said to Him as I Sketched rapidly: "Here is My idea of How you Might Surmount your Difficulties," I said. And I pointed out Some Blue Ribbon Dutch Colonials.

"That one is Beautiful!" he Exclaimed, Pointing to One with a 35 Foot Breadth, and a Spreading Lawn to Set it Off. I said to my Liver: "Behave! I have a Problem before Me."

"Can You not Build the House Wedge Shape, and Let it Extend Sidewise from the Foundation After it Gets high Enough? Or Perchance our Wonderful modern Inventors have perfected Some Elastic Building Material with which we Can Squeeze it On to the Lot." And I thought: "Ye gods and Little Fishes,

Dorsal Aspect, or, in Other Words, View from the Alley of Bildad's First Idea.

Can such a Nut Crack and Live?"

"How much money Have you to Start with?" I asked.

"We have $1500 Saved. My mother-in-law Has left $50. By Giving her the Gate to the Potters Field we have $1550 to Apply on the House."

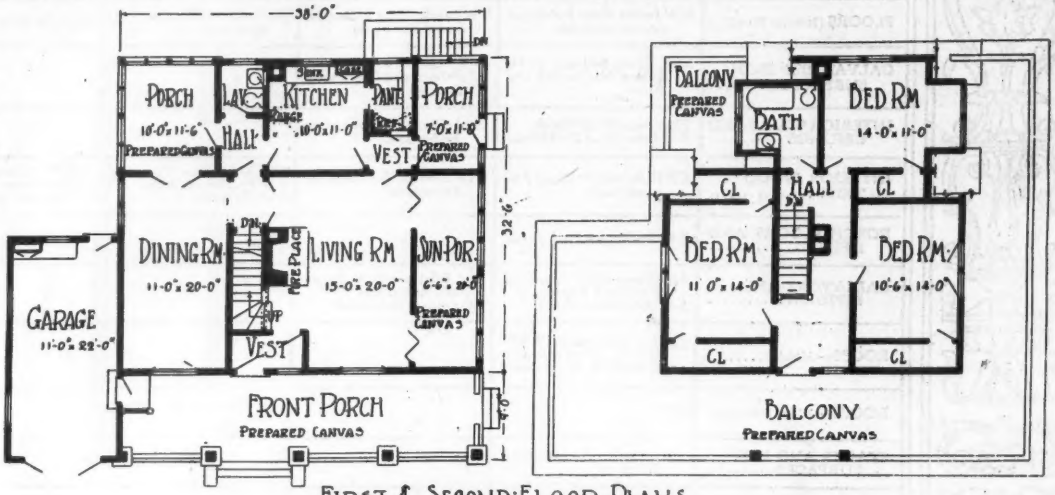
"Friend," I said, "Why don't you Buy some Footage on Each Side? Then you can Go and Get a Loan to Build Properly, and I shall be Proud to Figure with you. I Could Build You a House, but You would Have to Go outside to Turn Around."

He Guffawed. "Bildad, Old Man, you Get the Job! I purposely Made a Jump to Get Your Goat. We have 200 Feet Frontage; aye, and $10,000, $20,000 to Build the Home of our Hearts' Desire. I tried to Get you Flabbergasted, but it Can't be Done. When can you have the Plans ready, you Eighth Wonder of the World?"

"In About a Month; I'm Busy and Rushed, thank You. So you think I am the Eighth Wonder of the World?" I asked him,—"I wish you could Make my Wife believe It."

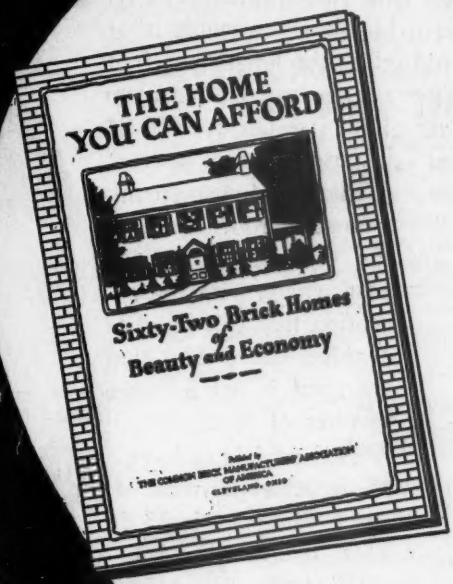
Summer Cottage with Big Porches

A PORCH and balcony flooring that is at once weatherproof, durable, easy on the feet, quiet and sightly is the ideal and aim of every architect, builder or building owner who has a suburban home, country place or summer cottage that is planned in the popular and proper way for such buildings—namely, with plenty of outdoor spaces—porches, sun parlors, sleeping verandas and balconies. One such floor covering that is much used, especially in the East where all are familiar with it because of its very general use for the decks of boats, is prepared canvas. A strong firm canvas is thoroughly impregnated with a special waterproofing and mildew preventing preparation; and this prepared canvas is cemented down over a smooth underfloor of soft wood. The home illustrated below makes very extensive use of this form of material.



FIRST & SECOND FLOOR PLANS

Here Is a Delightful Summer Cottage, in Which the Beauties of Nature and the Big Outdoors Can Be Enjoyed to the Fullest. Big Porches on Both First and Second Floors Are a Prominent Feature of This Home.



Sixty-two Homes for 10 Cents

Brand new pictures and plans in rotogravure. The best book and the newest of our many good ones.

Latest styles in homes. Each actually built and lived in and architecturally perfect. Beauty and attractiveness have been attained at nominal cost. Invaluable as a guide and full of practical suggestions for design, economies and improvements.

Just off the press. Even better than "Your Next Home" of which over 300,000 copies were sold. Only ten cents a copy. Send for yours now—"The Home You Can Afford."

Your Next Home

If you have not yet enjoyed a copy of this book of sixty homes, you have missed a pleasure enjoyed by over 300,000 people. The homes shown in picture and plan in "Your Next Home" do not duplicate those in the newest book "The Home You Can Afford." Send for both books. Ten cents each.

The Book of Moden Methods

Illustrations, and data on modern money saving methods. Valuable tables of material and labor costs. Complete details of Ideal Hollow Wall. Thousands used by builders everywhere.

Send 45c— Get All Three Books

The Common Brick Manufacturers' Association of America
2131 Cleveland Discount Bldg.
Cleveland, Ohio

Enclosed find_____cents. Please send me the books marked below.

"The Home You Can Afford" (10 cts.)
"Your Next Home" (10 cts.)
"Brick—How to Build and Estimate" (25 cts.)

Name_____

Address_____

The Common Brick Manufacturers' Association *of* America
2131 CLEVELAND DISCOUNT BUILDING
Cleveland, Ohio
The Ideal Brick Hollow Wall
Made of standard brick—cuts the cost one-third

INSTRUCTIONS IN ROOF FRAMING

LESSON THREE—By JOHN T. NEUFELD

EDITOR'S NOTE: *The question of correct roof framing seems to be one of perennial interest among our readers, if we are to judge by the number of questions and answers on that subject which are sent in monthly for the Correspondence Department.* AMERICAN BUILDER *therefore conducts this department for the benefit of its readers who may have roof framing problems. Write in your problem and Mr. Neufeld will answer it, and some questions and answers will appear in this department of* AMERICAN BUILDER *for the benefit of others who may be interested. We want to make this department the place where YOU can solve your roofing problems.*

The Length Per Foot Run

THE length per foot run of a rafter is equal to the diagonal distance across a triangle of which the base is 12 inches and the altitude is the rise in inches per foot run. In Fig. 10 we have shown a rise per foot run of 10 inches.

We obtain the length per foot run by finding the length of the hypotenuse of a right angle triangle with a 12 inch base and a 10 inch height as shown in the upper left hand corner of Fig. 10.

Hypotenuse $= \sqrt{12^2 + 10^2} = 15.62$

Length per foot run = 15.62 inches.

The length per foot run can also be found by measuring across the square between the figures 12 on the blade and 10 on the tongue; this, however, would not always come out as accurate as the above.

It will be readily seen that if we take this length per foot run and multiply it by the number of feet in the total run which is 6 feet 6 inches in this case or (6.5 feet) we obtain the length of the rafter.

$15.62 \times 6.5 = 101.35$ or 8 ft. 5½ in.

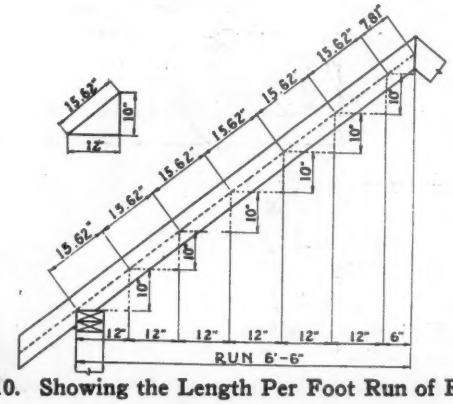


Fig. 10. Showing the Length Per Foot Run of Rafter.

Here we have shown how the length per foot run can be figured out for any pitch. In actual practice we usually take this length per foot run either from the tables on the steel square, or from tables in handbooks. All steel squares give the length per foot run for various pitches. Fig. 11 shows a table that gives the length per foot run for every pitch from 1 in. rise per foot to 24 in. rise per foot run.

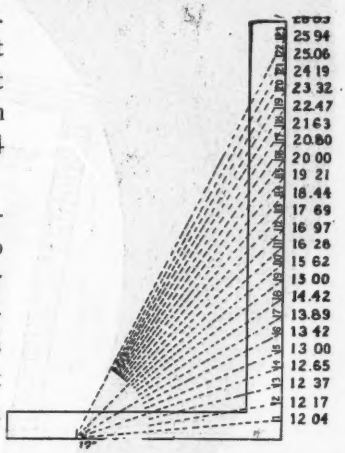


Fig. 11. Table Giving the Length Per Foot Run of Rafter of Different Pitches.

Fig. 12 shows a common gable roof similar to the one shown in our first article, with the exception that this one has a ridge board and that the span is not an even number of feet.

This roof is to have a 11 in. rise per foot of run. The span is 15 ft. This makes the run of the rafter 7 ft. 6 in.

We must deduct for ½ the thickness of the ridge board which is 13/16 in. This leaves 7 ft. 5 3/16 in. as the run of the rafter.

The 5 3/16 in. can be changed to a decimal part of a foot by dividing 5 3/16 by 12, which is equal to .4324 feet.

Therefore 7 ft. 5 3/16 in. = 7.4324 feet.

From the table, Fig. 11, we find that the length per foot run for a 11 in. rise is 16.28 in.

The total length of the rafter therefore is

$7.4324 \times 16.28 = 120.9995$ inches

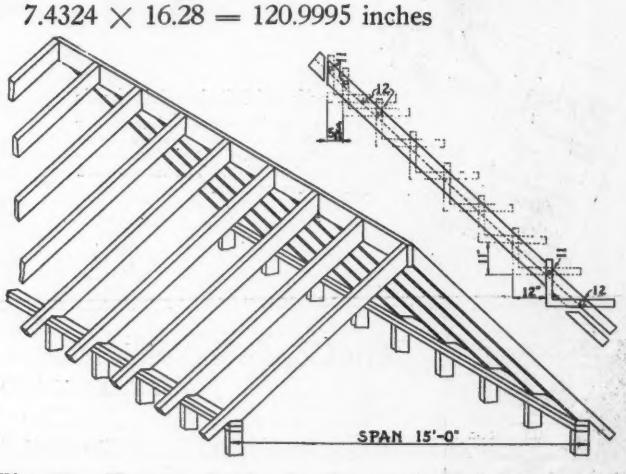


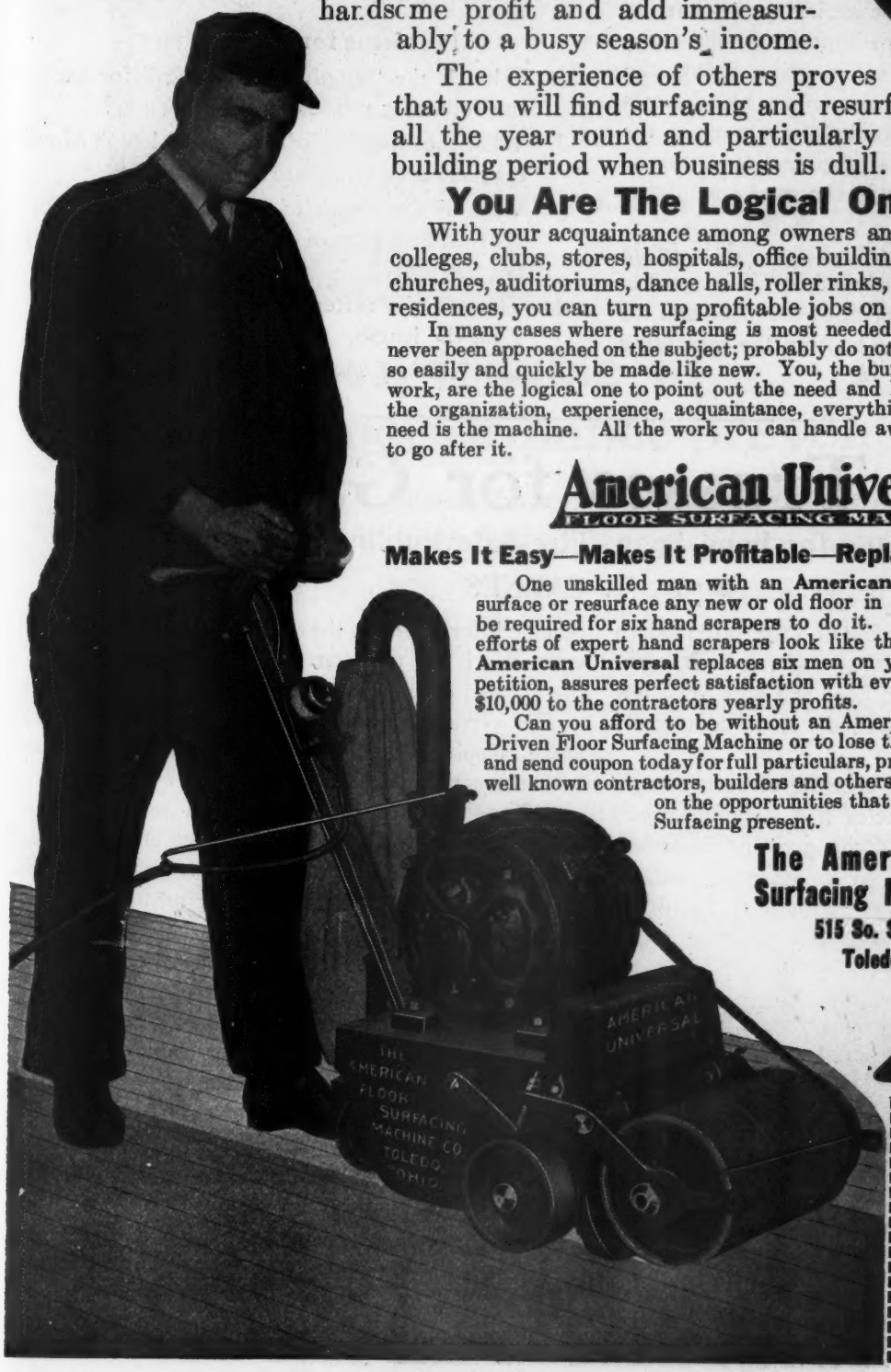
Fig. 12. How to Apply the Square to Get Length of a Rafter Without Any Calculations.

Floor Surfacing Jobs Insure Steady Income

Add $5000 to Yearly Profits

Go after and get the floor surfacing business in your locality with an American Universal Electrically Driven Floor Surfacing Machine. You can turn off-season losses into handsome profit and add immeasurably to a busy season's income.

The experience of others proves that you will find surfacing and resurfacing jobs plentiful all the year round and particularly so during the slack building period when business is dull.



You Are The Logical One To Do It

With your acquaintance among owners and occupants of schools, colleges, clubs, stores, hospitals, office buildings, apartment buildings, churches, auditoriums, dance halls, roller rinks, factories, bowling alleys, residences, you can turn up profitable jobs on every hand.

In many cases where resurfacing is most needed owners or occupants have never been approached on the subject; probably do not realize that their floors can so easily and quickly be made like new. You, the builder, who understands such work, are the logical one to point out the need and handle the job. You have the organization, experience, acquaintance, everything in your favor. All you need is the machine. All the work you can handle awaits you. You have only to go after it.

American Universal
FLOOR SURFACING MACHINE

Makes It Easy—Makes It Profitable—Replaces 6 Men on Payroll

One unskilled man with an **American Universal** can completely surface or resurface any new or old floor in the same time that would be required for six hand scrapers to do it. The results make the best efforts of expert hand scrapers look like the work of amateurs. **The American Universal** replaces six men on your payroll, removes competition, assures perfect satisfaction with every job and adds $5,000 to $10,000 to the contractors yearly profits.

Can you afford to be without an American Universal Electrically Driven Floor Surfacing Machine or to lose the profits of its use? Fill in and send coupon today for full particulars, prices, terms and letters from well known contractors, builders and others who are already cashing in on the opportunities that American Universal Floor Surfacing present.

The American Floor Surfacing Machine Co.
515 So. St. Clair St.
Toledo, Ohio

Tear out the coupon and mail it right now. Just your name and address in pencil will bring you the interesting details.

American Floor Surfacing Machine Co.
515 S. St. Clair Street, Toledo, Ohio

Please send me without obligation, full information regarding American Universal Floor Surfacing Machine

( ) I am a contractor and want machine to use in my business

( ) I am interested in surfacing floors "The American Universal" ways as a business

Name.....

Street.....

City.....

State.....

120.9995 in. = 10 ft. .995 in., say 10 ft. 1 in.

The ridge board in this case made the problem more complicated. This complication can be avoided by deducting for the ridge board after we have found the total length of the rafter, including the thickness of the ridge board. Some short cuts on this point will be discussed in a later article.

Applying the Square

Another method used to obtain the length of a rafter is illustrated in the upper right hand corner of Fig. 12. Here we take 12 in. on the blade of the square and the rise per foot run on the tongue. Apply the square with these numbers on the measuring line. Starting from the bottom, mark, for the bottom cut, and make a mark on the rafter at the 11 in. point. Move the square up so that the 12 in. point on the blade comes on the mark just made, and again make a mark on the rafter at the 11 in. point of the tongue. Repeat this as many times as there are feet in the total run of the rafter.

To get the extra length for the extra 5 3/16 in. in the run, the square is moved only 5 3/16 in. forward in place of 12 in., but the 12 in. point of the blade and the 11 in. point of the tongue are kept on the measuring line just as before. See Fig. 12.

Comparing the Methods

The "Length per foot run method" is very accurate and can be used in all cases with satisfaction.

It is also a short method, as the length per foot run is given on steel squares and on other tables.

The second method (applying the square) is very convenient to use on the job. It is accurate enough for ordinary cases but must be used with care.

Patent clamps or "fences" can be procured to fasten on the square so that the run and rise of the rafter become fixed points, and the square may be slid along the rafter always holding the same position with respect to the measuring line.

Problems for the Student

1. What is the "length per foot run" for each of the following pitches: ⅓; ¼; ⅙; ¾?
2. What four methods of finding the length of rafters have been explained?
3. What is the length of a common rafter, for a roof with a span of 20 ft. and a rise of 16 in. per foot run?
4. The run of a rafter is 8 ft., the pitch is 19/24. Find the length.

Answers will be found on page 107.

Steel Trusses for Garages

Proper Designs for Long Span, Fire-Safe Public Garage Roofs

By R. R. CARNES

THE planning and designing of a fire-safe modern garage 100 ft. by 150 ft., two stories high, without posts on the second floor and with very few posts on first floor would puzzle most of the contractors in the smaller towns.

The average town is today erecting modern garages such as these and the contractor that is familiar with this type of construction and can give his customers reliable information in the way of sketches, designs and estimates, is the one that will secure the contracts for these kinds of buildings.

The average garage presents a problem of storage space, display space, light, ventilation and economy of construction.

Storage space includes parts and cars. Bins and shelves take care of the parts but the efficient storage of cars presents a problem in roof trusses and floor girders which can be economically solved by use of steel correctly designed.

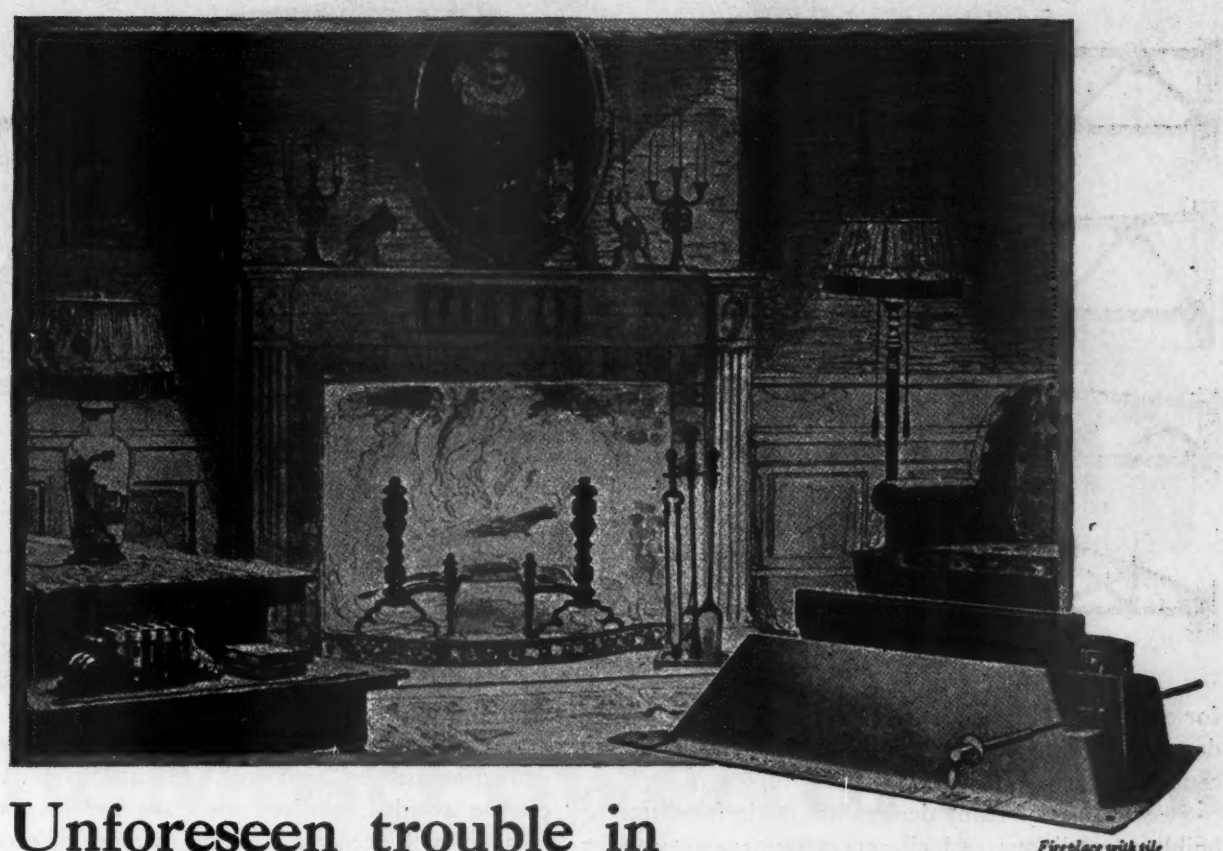
Packard Garage, Lexington, Ky., Ed. H. Smith, Contractor.

The display space is somewhat easier but requires careful planning to secure an efficient practical display at a reasonable price.

Light and ventilation are necessary and can be had in abundance at very little cost if the building is properly designed.

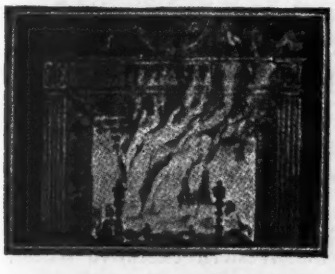
Economy of construction in the garage can only truly be obtained by having the building planned by those familiar with garage construction.

The problems are easily solved



Fireplace with tile facing. Peerless Dome Damper No. 17 operated from face of fireplace

Unforeseen trouble in fireplace performance prevented



The flue, throat and fireplace opening are apparently well proportioned But at times the fireplace smokes

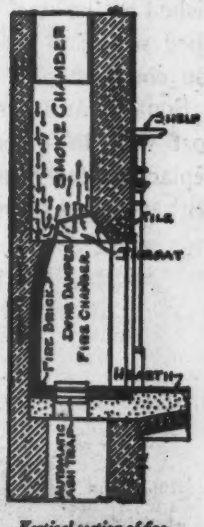
A slight contraction of the throat by turning the handle of the Peerless Dome Damper corrects this fault

Freakishness in draft conditions easily remedied by Peerless Dome Dampers

FIREPLACES that theoretically should have drawn perfectly have, in many instances, failed in practice. Queer twists of the wind occasioned by neighboring trees, roof tops or unusual topography, have resulted in entirely unexpected draft conditions.

In most cases these troubles could have been prevented by the simple inexpensive precautionary measure of installing a Peerless Dome Damper

This equipment will enable the fireplace to properly perform all its required functions—to heat the room, to ventilate the room, to adapt itself to varying requirements of the fire itself and changing conditions of draft, to allow the smoke and not the heat to escape up the chimney, to permit of closing when not in use.



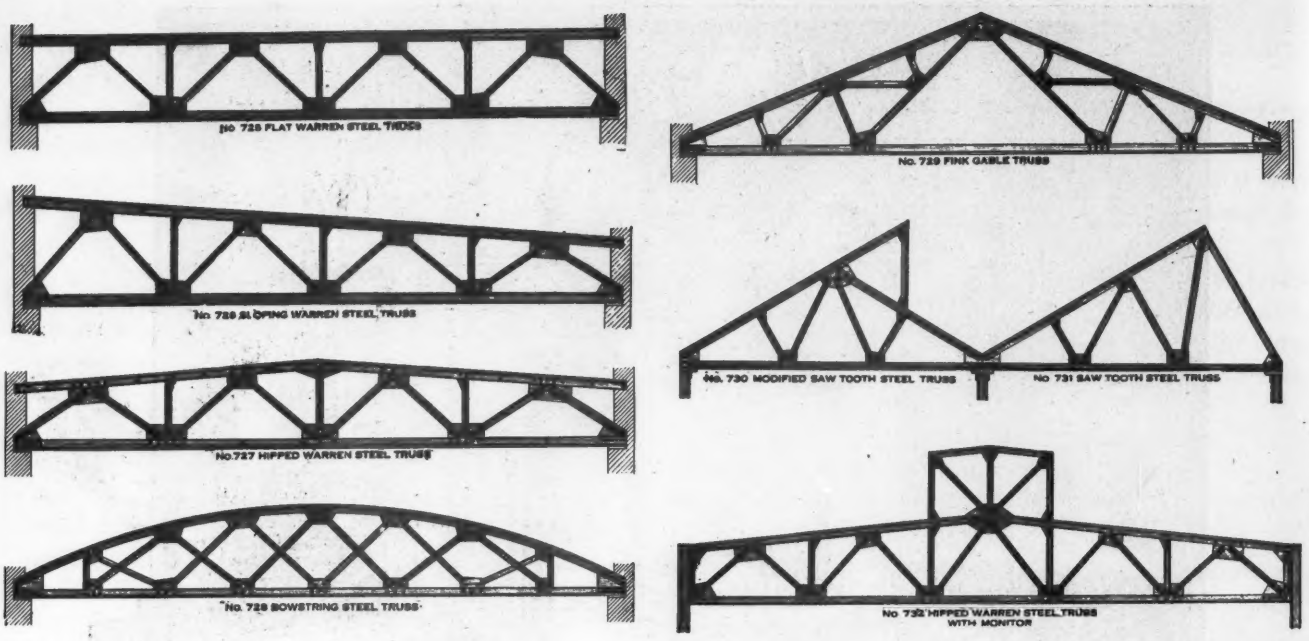
Vertical section of fireplace, showing installation of Peerless Dome Damper. See position on smoke shelf. Flange on front acts as lintel

Sold by leading Building Material, Tile, Fireplace and Hardware dealers

PEERLESS MANUFACTURING CO.
LOUISVILLE, KY. U.S.A.
Largest manufacturers of fireplace equipment in the world

PEERLESS DOME DAMPERS

Write for Catalog and Blue Print Installation Specifications



for contractors in the average size town by the service department of steel companies specializing in garage construction.

Steel trusses of many designs are made for different building conditions and efficient arrangements can be had at a reasonable cost. Floor girders of steel will eliminate posts in the two story job with safety and economy. Some of the standard truss designs are shown. Spans from 30 ft. by 125 ft. are practical.

The show windows and doors are designed and furnished by the steel companies and the contractor is supplied with full size details of the fronts if he secures the contract.

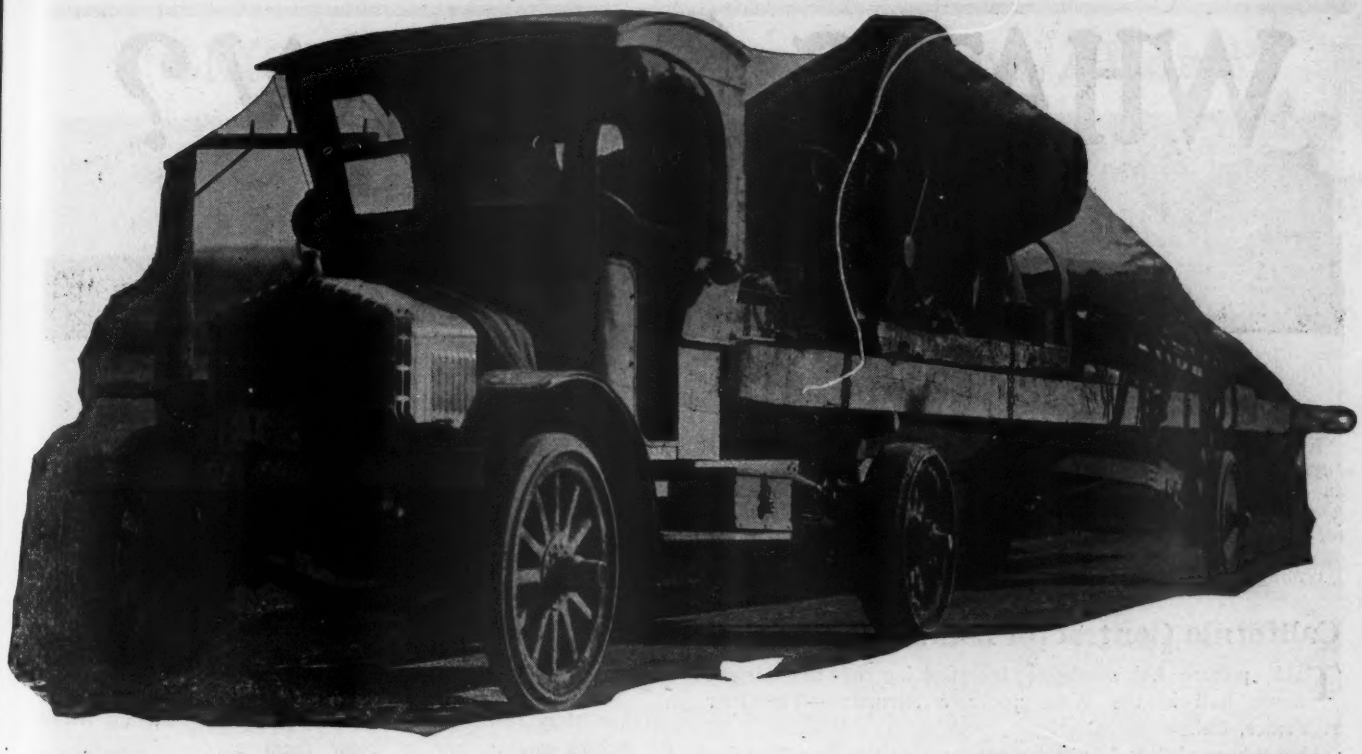
Some contractors do not realize that steel windows cost very little more than the brick walls that they replace. Steel windows of almost any size can be had with ventilators and the building can be flooded with light and air if the proper layout is made.

Every owner wants a fire-safe building but some are denied because of high cost. Hazardous construction can be avoided in many instances by the contractor familiar with accurate cost and methods of economical modern construction. Steel lumber construction combined with structural steel framing is solving the problem for many builders. Why not get in touch with the sources of supply for modern garage construction and be in better position to secure good contracts?

✣

CLARENCE M. WOOLLEY, for twenty-two years president of the American Radiator Company, was elected chairman of the board of directors at a recent meeting held in New York. Charles M. Parker was elected president, succeeding Mr. Woolley. The new vice-president, Mr. C. K. Foster, will have charge of the Western executive offices, Chicago, Ill.

Type of Large Capacity Public Garage with Curving Trussed Roof. Very popular with builders, owners and the car-driving public.



"The Most Powerful Truck *of* Its Capacity Build!"

That is the way E. Carlisle of Ellsworth Falls, Maine, expresses his enthusiasm for the performance of his 2-ton Garford which he has had in service for six years.

"We have never had any trouble with it yet and the motor has never been overhauled." Mr. Carlisle goes on to say, "The truck will handle 10 tons anywhere with a trailer. We use it mostly for moving derricks and boilers. The load shown in the photograph is 9 tons on a 50 mile haul."

Garford Engineers discourage overloading, but the high standard of built-in service of this unit, however, is noticeable first in strength, power and easy handling, in freedom from trouble and low operating cost, and finally in the way it continues to give good service year after year.

When you consider the purchase of a truck for any purpose whatever, it will pay you to call on Garford Engineers for information and recommendations.

They have made intensive surveys and analyses of haulage requirements in more than 90 per cent of American industries, and are prepared to give you valuable co-operation.

Write for further particulars.

The Garford Motor Truck Company, Lima, Ohio

Manufacturers of Motor Trucks 1 to 7½ Tons

GARFORD

DEPENDABLE TRANSPORTATION

EDITOR'S NOTE: *The* AMERICAN BUILDER *does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address* AMERICAN BUILDER *Information Exchange, 1827 Prairie Ave., Chicago.*

California Contractor Establishes Record

THE picture below shows the flooring of the largest dance hall in the West under construction—The Pier at Venice, Cal.

Under heavy bond, A. B. Rice, manager of the Rice Flooring Company of Los Angeles, accepted the contract to lay, surface, fill, wax, and polish the entire 50,000 square feet of flooring in five days—a stupendous task.

Mr. Rice worked his equipment twenty-four hours a day, using three shifts of carpenters. The last square foot of flooring was polished just two hours before the first dancers made their appearance on the floor.

The most remarkable part of this record-breaking performance, as we see it, is the great area of flooring which was surfaced in such a short length of time. The floors were surfaced by a small fleet of floor surfacing machines of a popular make. (Note the machines in the photograph.)

As fast as the floors were surfaced, they were filled and waxed by a small army of men.

The floor-surfacing machines were put to good use again when the floors were ready for polishing. The sandpaper on the drum of the machines was replaced with brussels carpet. Covered in this manner, with the drum revolving at a high rate of speed, the floor was given a beautiful polish. If it would have been necessary for Mr. Rice to resort to hand scraping and hand polishing on this job, no doubt he would have been obliged to assume a heavy loss.

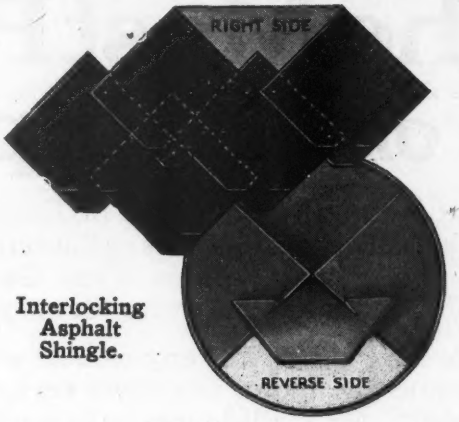
Such a gigantic task had never been attempted before, and it created so much interest in general that moving pictures were taken showing the work at different stages.

Mr. Rice and his capable workers are to be complimented for turning out such an enormous amount of work in such a very short length of time—and above all, doing a first-class job on every inch of flooring.

✣

These Shingles Lock On

A NEW type of asphalt shingle is occasioning a good deal of favorable comment of late. They interlock one to another, thus forming a locked-on-tight roof. Strong winds or storms cannot pry or blow them up.



Interlocking Asphalt Shingle.

These shingles are distinctly different in design and give an architectural beauty entirely individual.

In re-roofing, they are laid over the old wood shingle roof, locking and fitting tight, eliminating any possibility of "humps" or raised surfaces. No fuss or tearing off old shingles—no littering up of premises.

They are made in rich, mellow-toned red, green or blue-black non-fading colors.

Contractor A. B. Rice and Helpers Surfacing a 50,000 Square Foot Floor.

"GMC Trucks Are Seven Steps Ahead"

GMC Economy is Unequalled

GMC special and exclusive features besides providing extra pulling power and high road speed effect economies in maintenance cost that are impossible without them. Every part of GMC chassis and engine is made oversize for strength. A long life of interrupted service is assured. Furthermore every wearing part is fitted with a bushing or bearing that is quickly and easily replaceable. GMC trucks, therefore, last indefinitely and their upkeep cost is remarkably low.

The full story of GMC Tracks, complete detailed description of their exclusive features and an explanation of the way these add to GMC earning power and cut operating cost are given in the illustrated booklet "Seven Steps Ahead." A copy of this booklet is ready to mail to you. Fill in the coupon below. Send it in today and your booklet will be forwarded by return mail.

GENERAL MOTORS TRUCK COMPANY
Division of General Motors Corporation
PONTIAC, MICHIGAN

General Motors Trucks

GMC

Mail This Today

General Motors Truck Co.,
Dept. 9.
Pontiac, Michigan

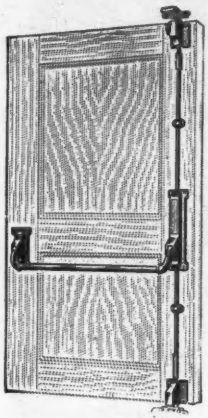
Please send me literature on GMC Trucks including booklet "Seven Steps Ahead."

NAME.....
BUSINESS.....
ADDRESS.....
CITY.....STATE.....

Extra Strong Panic Exit Locks

THREE distinct types of panic exit locks are offered by a prominent Eastern manufacturer.

First, the gravity type, with top and bottom locks, which are connected by a vertical rod securing the door at two places, both top and bottom. There is not a single spring in either the top or bottom locks. The action of this exit device is solely lever (cross-bar) and gravity (vertical rod) action.



Strong Panic Lock.

Second, the mortise type. That is, the cross-bar on the inside of the door, operates a latch which is mortised into the edge of the door. These devices are made of solid bronze throughout, including the latch cases.

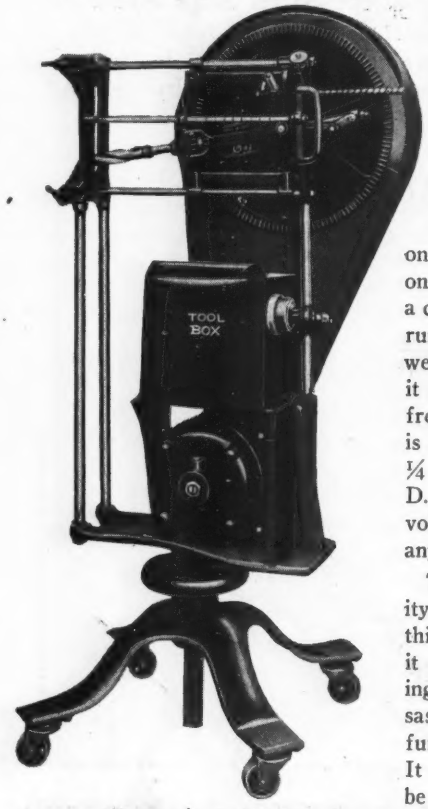
Third, the horizontal rim type exit locks. The remarkable feature of this device is that there is only one spring, that which keeps the latch bolt forward. It will be noticed that no mortising is required. Therefore, the installation cost is comparatively low. The School Board of Newark, N. J., are changing the entrance doors on all their old school buildings by placing a mullion between the active and standing leaf, so that these entrances may be equipped with these horizontal rim devices.

✣

New Electrical Mortising Machine Saves Time and Money

THE electrical mortising machine here pictured is designed for use in the cutting of door mortises in large buildings such as apartment houses, schools, office buildings, etc. Until recently this work was done by a hand operated machine, but with the advent of this electrical machine the work may be done easier, quicker, and, in the long run, cheaper.

This machine will cut a perfect mortise with straight sides and smooth bottom in any kind of wood, can be adjusted to cut any sized mortise from a round hole to 6¼-inch slot and can be used on stock from ¼-inch to 2½-inch thickness.



Electric Power Door Mortiser.

Special base for use on wide stock furnished on request. Mounted on a cast iron base with easy running rollers and weighing only 100 pounds, it can be moved easily from place to place. It is belt driven from a ¼ h. p. motor, A. C. or D. C., of any required voltage for attaching to any light socket.

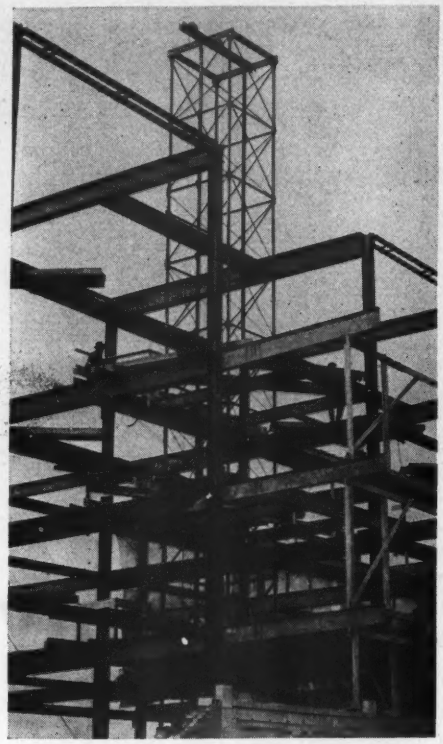
The portability, capacity and unusual power of this new mortiser adapt it for use in woodworking shops, cabinet shops, sash and door factories, furniture factories, etc. It is already proving to be a good investment for contractors and carpenters.

Hoisting Towers of Tubular Steel

THE tubular elevator has been developed as a result of several years' experience in the manufacture of tubular steel drilling and pumping derricks for oil country use.

It was necessary first to study the requirements of a successful tower for builders' use.

It must be strong enough to take out one whole side if necessary except for bars for floor levels. These bars must be adjustable so as to provide for any floor level and must be able to take any downward strain occasioned by the unloading and must also be able to provde a stiffening factor in the horizontal plane.



This Illustration Shows the Tubular Elevator Erected at Apartment Being Built by Watkins Realty Company at Murray and Forward Avenues, Pittsburgh, Pa. Height, 110 feet; 17 bays; weight, 12,900 pounds; completely erected in 15½ hours by seven men. Total material, including cage, took two moderate truck loads.

Ease of erection must be obtained by having each piece small enough for easy handling by one man, without the use of a ginpole.

As far as possible, pieces must be interchangeable. The price must be low enough to effect a pronounced economy.

It must be capable of erection by any intelligent workman without previous experience and expert knowledge.

With the above requirements in view, much time was spent designing, experimenting and testing out this elevator, which was then ready to market.

The first elevator going into commercial use was 110 feet high, was erected in 15½ hours at an erection cost of $67.97, the average wage rate of men employed being less than 63 cents an hour. In other words, there was ease of erection by comparatively unskilled workmen.

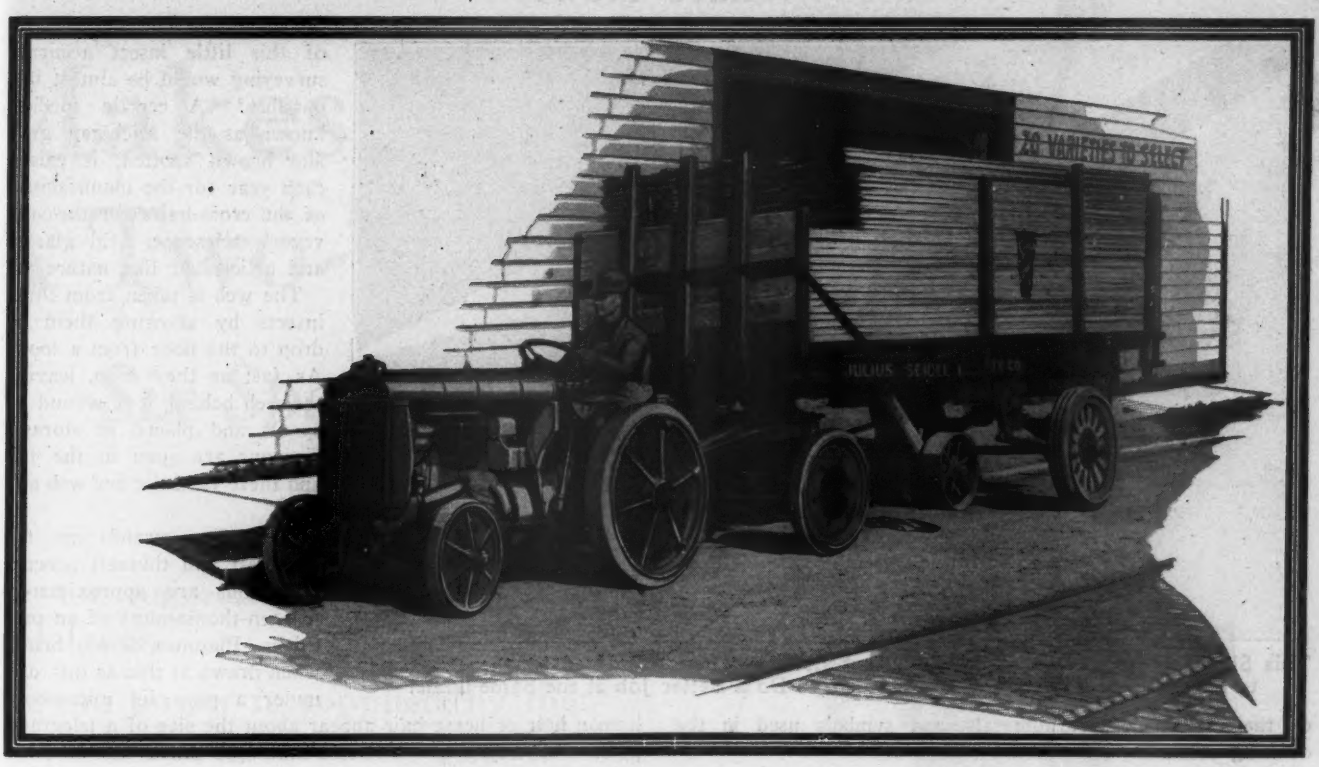
✣

Lettering Guide and Pen Aid Drafting

THE contractor who often has drafting to do, or who even goes so far as to maintain a drafting department, is likely to have considerable trouble in maintaining the perfection of lettering that is so necessary to assure a neat and a readable set of plans. To an even greater extent the same difficulty confronts the architect or the engineer.

Hitherto, hand lettering has been in vogue, but the high pressure of modern construction calls for speed in the drafting room that is not consistent with the ordinary standards set for lettering. As a result, fewer draftsmen are now good letterers, and mechanical aid must be sought.

One of the most helpful devices recently introduced to the industry is a set of lettering guides, with a special lettering pen, that has been patented by a New York firm. The lettering guides, made of transparent Pyralin, are perforated with a series of openings that act as guides in the forming



Seven Fordsons Save $29,578 Annually

In every business where hauling or delivery of materials is a factor, the Fordson tractor provides an ideal heavy duty haulage unit.

One of the best examples of Fordson Economy is found in the experience of Julius Seidel Lumber Company of St. Louis, one of the largest wholesale and retail lumber companies in the Mississippi Valley.

A fleet of seven Fordsons replaced twenty teams of mules and one 3½-ton truck for yard work and local deliveries. This arrangement represents a reduction of $9,000 in equipment; eliminating fourteen drivers saves $20,384 yearly, while the difference in operating and maintenance expense amounts to $9,194.

Not knowing a test was being made, a driver with a Fordson and trailer hauling 6,000 feet of lumber on a one per-cent up grade, including five slow-ups for traffic, averaged 11 miles an hour and returned over the same route with two slow-ups at 16 miles an hour.

The total operating cost of the Fordson, including driver's wages, averages $7.39 a day. Considering that one Fordson costs but one-third the price of a two-ton truck, and can haul more than a seven-ton truck, the Fordson owner is combining economy with the highest type of heavy haulage efficiency.

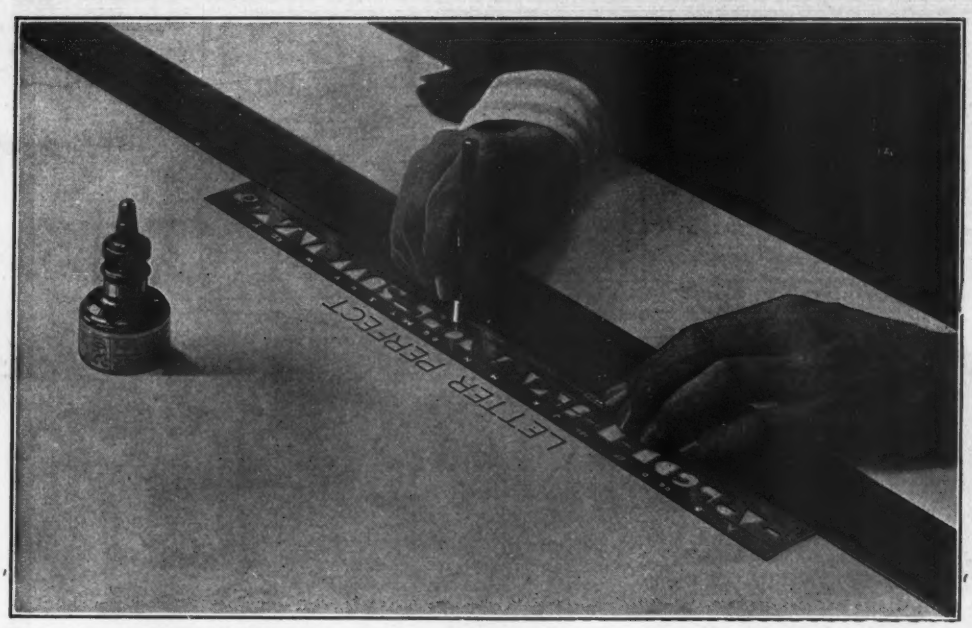
Perhaps you too can increase the margin of your profits by reducing your haulage costs with a Fordson.

Any Authorized Ford Dealer will be glad to help you work out your haulage problems.

To Fordize is to Economize

Ford

CARS · TRUCKS · TRACTORS



This Shows How the Lettering Guide and Lettering Pen Are Used by the Draftsman to Speed Up His Work and Enable Him to Do a Better Job at the Same Time.

of the various letters, numerals, and symbols used in the drafting room.

Since the value of such a contrivance would be less were the number of the perforations too large—as would be the case if each letter, symbol, and numeral had its own individual perforation in the guide—the instrument is so constructed that all of the necessary characters can be formed from a comparatively few perforations that are used in combination of two for the more difficult letters. That is to say, the combination of angles and curves represented by two given perforations makes possible the forming of the desired letter. In such cases, the movement of the guide to bring the second perforation into accurate position is accomplished with the aid of a space measuring shift button. Some characters, on the other hand, are formed through a single perforation.

The guides come in different sizes for the different sizes of characters that must be used. They eliminate need of guide lines, blocking, and retouching. The center is raised to prevent smudging of the ink. Four sizes of pens are obtainable, and they are specially designed for use in connection with the guides. ✣

Spider Webs for Surveyors' Telescopes

THE spider, to most people, is an offensive, repulsive creature. And yet do you know that without the assistance of this little insect accurate surveying would be almost impossible? A certain species, known as the Michigan gray and brown spotted, is raised each year for the manufacture of the cross-hairs for the surveyor's telescope, field glasses and articles of like nature.

The web is taken from these insects by allowing them to drop to the floor from a loom. As fast as they drop, leaving the web behind, it is wound on spools and placed in storage. Cocoons are spun in the fall and these yield the fine web and eggs.

These fine strands are the strongest and thinnest procurable, and are approximately five-ten-thousandths of an inch thick. Platinum is too brittle when drawn as thin as this, and under a powerful microscope human hair or horse hair appear about the size of a telegraph pole. Properly, this fine strand should be called "cable," since it is made up of four or five threads.

The threads are steamed and stretched so that when they are once cemented to the diaphragm of the surveying instrument they will not be affected by changes in temperature. After treatment, these strands are stronger than any wire of proportionate size, and there are surveying instruments that have been in use for forty years with the cross-hairs still intact.

Here Is George Hannes, Spider Expert Who Has Been Engaged in This Work for Thirty-five years. Hannes collects the spiders used in a big Toledo industry and knows all of the ins and outs of web collection and culture.

Coal Chute with Certified Malleable Iron Door, Frame and Hinges.

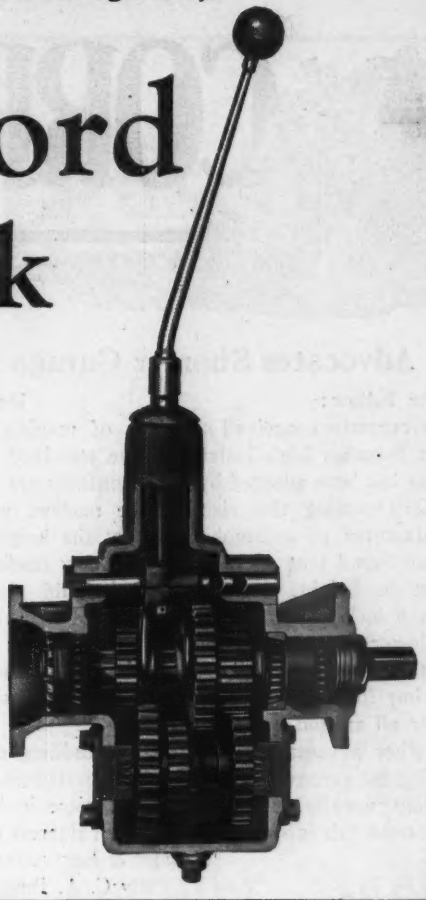
An Unbreakable Coal Window

MALLEABLE iron and copper-steel construction of this coal window make it solid and durable. Cast iron windows sometimes crack under rough treatment and it is necessary to replace the complete window through inability to secure new parts. The ordinary basement window constructed of wood, is soon battered up, broken and disfigured and is very unsightly.

As you will see from the photograph, this window protects the top of the window by the cover, and the sides and ground are always kept clean by the chute, which is hinged and disappears when the window is closed. It is burglar-proof and self-locking. Residence styles have a chain to the latch for unlocking.

Makes Your Ford A Two-Ton Truck

Six Speeds for Your Ford



Two-ton ruggedness is built into the Ford Truck.

Two-ton power is supplied by the famous Ford engine.

The Warford Auxiliary Transmission forges the link between the two, which makes the Ford truck a distinctively economical two-ton haulage unit.

The Warford-equipped Ford, with a speed for every condition of road and load, hauls with the best of them through heavy going and passes the rest of them on good roads.

Warford couples bull-dog strength and speedwagon fleetness with Ford dependability and economy.

If your Ford dealer hasn't the Warford transmission, write for our dealer list.

What the Warford Is and What It Does

The Warford Auxiliary Transmission is a high-grade gear shift of the approved sliding gear selective type which gives the Ford six speeds forward and three reverse.

The Warford transforms engine revolutions into rear axle torque at six different ratios, from 36 to 1 in low, to 5 to 1 in high, allowing the engine to run at normal speed whether the truck is traveling one mile an hour or thirty.

In adapting normal engine speed both to heavy hauling and high speed, the Warford saves wear and tear, loss of power and waste of gas and oil, caused by the racing motor.

Warford

AUXILIARY TRANSMISSION

The Warford Corporation **44 Whitehall Street, New York**

CORRESPONDENCE

Questions Answered—Ideas Exchanged

Advocates Shorter Garage Doors

To the Editor: Dubuque, Iowa.

We recently conceived the idea of making a garage door 7 feet 6 inches high instead of the standard 8-foot opening, such as has been adopted by the manufacturers for a long time.

Before putting this size on the market, we wrote every manufacturer of automobiles to get the height of their cars and we found that all pleasure cars now made do not exceed 7 feet in height, and, therefore, would clear an opening 7 feet 6 inches high. The tendency of manufacturers is for even lower cars than in the past.

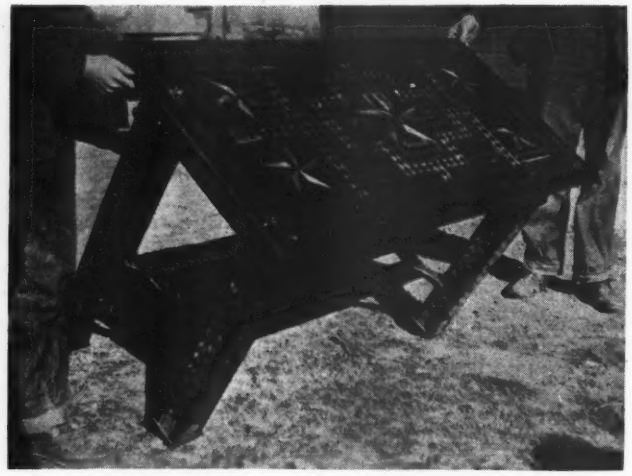
Not only does this new door cost a little less, but it means a saving in the construction of a garage, as 6 inches less lumber all around need be used.

Another advantage is that 8-foot studding can be used for framing the garage where heretofore most builders used 9-foot studding, usually cutting an 18-foot piece in half.

We trust this information will be of interest to your readers.

FARLEY & LOETSCHER MFG. CO.,
By C. A. Ihrcke, Adv. Mgr.

✣



Inlaid Table Made By Boy

To the Editor: Muskogee, Okla.

I am sending you a picture of an inlaid table I built.

The table has over 5,000 separate pieces in it, and eight different kinds of wood. One leg has 512 pieces in it. It is 51 inches by 26 inches wide.

I am a boy 15 years old. A. REX MCGEEHON.

✣

Care of Paint Brushes

To the Editor: Rapid City, So. Dak.

In answer to Mr. Megill's question on how to clean paint brushes which have dried hard, I am sending the following set of rules on "Care of Brushes." Paste them up in your shop for a memorizer:

Hair and bristle brushes must be kept clean and soft. This can be done by care and faithfulness. They should not be allowed to become dry with paint or varnish in them. To prevent this, wash them out in oil or turpentine as soon as you are through using them, or they may be left in the paint or varnish for a few days. They may be kept over night by wrapping them very closely in paper if they have been used in a slow-drying material; in this way they may be carried from one place to another. Brushes should not be left to dry with even clean oil or turpentine in them. If they are to be put away, they should be well washed first with soap and water, then with clean water, then hung up until thoroughly dry.

In use brushes are best kept in what is called a brush safe. A deep wooden pail with nails driven in its sides at different distances from the bottom and with a close cover makes a good receptacle for brushes. The brushes have holes in the handles, or loops of cord tied to them, and are hung on these nails; their bristles dip into some oil or turpentine in bottom of pail. They are so hung that they do not dip into the liquid above where the bristles project from the binding. If brushes are left standing on the bristles on the bottom of the vessel, they soon become one-sided and distorted in shape. Tin brush safes may be bought of any large dealer in brushes.

A brush that has dried with paint or varnish in it may be recovered by soaking it in a non-alkaline varnish remover. This will in time soften it so that it may used again, but it is not improved by such treatment.

Brushes used in shellac should be washed out with alcohol instead of turpentine or benzine. No brush is good unless it is clean.

Hope that you may find these rules helpful.

C. A. CARRIER,
Contractor and Builder.

✣

Ten Room Doctor's House

To the Editor: Farmington, Iowa.

Have not sent one in for a long time, but here is a good one we are finishing for Dr. C. L. Paisley, Farmington, Iowa, 34 by 54 feet, ten rooms, garage and seven closets.

Really don't know what we would do without the AMERICAN BUILDER. H. C. MULVIHILL AND J. L. HAMBLIN,
Carpenters and Builders.

Ten-Room House Designed and Built by Mulvihill and Hamblin.

TRUSCON
COPPER STEEL
STANDARD CASEMENTS

Everyone Can Afford These Copper Steel Standard Casements and Basement Windows

Irrespective of their advantages, the downright economy of these windows appeals to everyone who builds. Whether you are planning a single cottage or a many-storied apartment, you should investigate these modern home essentials.

Truscon Copper Steel Standard Casement give 100% ventilation. They are proof against wind and storm—durable, fireproof, and never need repairs. Outside panes are easily cleaned from within. With all these advantages, standardization and quantity production make possible an inexpensive price.

Truscon Copper Steel Basement Windows make the basement bright and cheery, admitting 50% to 80% more daylight. They always open and close easily; never stick, leak or need repairs; and lock automatically. Yet their price is within the reach of all.

It will be only a short time before no home will be considered modern without them. Dealers everywhere. Large supply stocks in centrally-located warehouses.

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

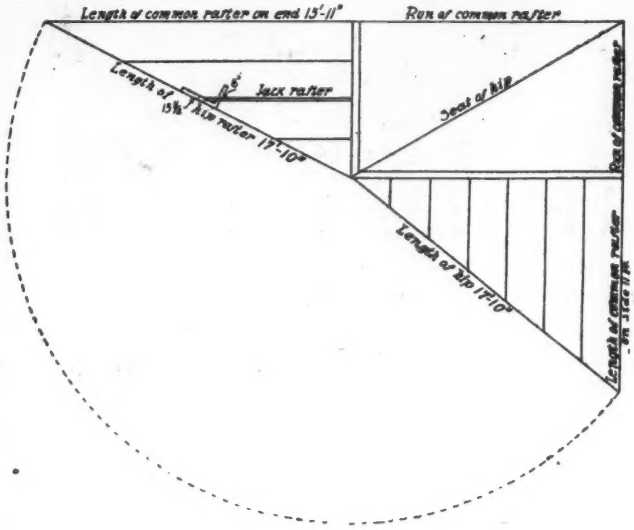
Warehouses and Sales Offices from Pacific to Atlantic. For addresses see phone book of principal cities. Canada: Walkerville, Ont. Export Div.: New York.

TRUSCON
COPPER STEEL
BASEMENT WINDOWS

A Fine Exposition of the Solution of Unequally Pitched Roofs

Answering Mr. Bates' roof inquiry in the November number of the AMERICAN BUILDER—he has a problem wherein two unequal pitched roofs meet upon a common hip. Mr. Bates states that his shed runs into the main building at a pitch of 6½ inches rise to each 12 inches of run. We assume that he refers to the common rafter on the end. Since the run here is 14 inches, the rise will be 14 times 6½ inches or 91 inches or 7 7/12 feet. The rise of the rafter on the side will also be 91 inches, but the run here is only 8 feet—hence we have unequal pitched roofs.

If Mr. Bates will use his steel squares on the side graduated into twelfths of an inch, calling the inch marks feet and the twelfths inches he will find that the bridge measure of 14 inches and 7 7/12 inches (rise and run of common rafter on end) will be 15 11/12 inches or 15 feet 11 inches. This is the length of the common rafter on the end, it is also the hypotenuse of a right angle triangle and may be as easily found by the process involved in extracting the square root. In the same manner the length of the common rafter on this side is found to be 11 feet. We shall have need of the length of these common rafters further on. It will be observed that the run



How to Frame Unequal Pitched Roofs.

of the hip is equal to the hypotenuse of a right angle triangle 8 by 14 feet. Using the steel square as before mentioned, this bridge measure is found to be 16 feet 1½ inches, or more accurately 16.12 feet. This would be the length of the hip if it lay in a horizontal plane, but since it is inclined from the horizontal—its rise being 7 7/12 feet, it will be necessary to find another hypotenuse in order to find the true length of the hip. The bridge measure of 7 7/12 inches (rise of hip) and 16½+ inches (run of hip) is found to be a little less than 17 10/12 inches, or 17 feet 10 inches.

This is the length of the hip. Although there are more jacks on one side of this hip than the other, their several lengths and cuts are found in the same manner, so, for example, we will find the length of the shortest jack in the end of the roof. We assume the jacks are to be spaced 2 feet on centers. The run of the common rafter on the side is 8 feet and there will, therefore, be four openings for jacks at the end. It is plain that if the length of the hip—17 feet 10 inches—be divided by the number of openings—four—the common difference, or, more specifically, the length of the hip between the plate and top of first jack will be equal to the hypotenuse of a triangle whose base is 2 feet. In other words, we have given the base and hypotenuse of a right triangle to find the altitude. This is true whether the framework is lying in a horizontal plane or is inclined therefrom.

Expressed decimally, 17.8 feet divided by 4 equals 4.45 feet. Since 4.45 feet is the square root of the sums of the other sides squared, the sum of the other sides squared will be 4.45 times 4.45, or 19.8. The base—2 feet squared equals 4 and 19.8 less 4 equals 15.8, which is the square of the altitude.

Extracting the square root of 15.8 we have 3.97+ feet, or practically 4 feet. This is the altitude of the first small triangle formed by the hip, plate and short jack. It is also the length of the shortest jack. The second or next shortest jack will be twice 3.97 feet, the third three times 3.97 feet, etc.

The length of the jacks in the side of the roof may be found in like manner, but there will be seven openings instead of four. The plumb and foot cut of jack rafters in unequal pitch roofs are the same as those for the common rafters but to obtain the cheek cut the square must be used in a somewhat different manner. For the cheek cut of jacks in the end of the roof, take the run of the common rafter in the side of the roof on the tongue of the square and the length of the common rafter in the end of the roof on the body and cut along the body.

In the same manner the cheek cut of jack rafters in the side of the roof is obtained by taking the run of the common rafter in the end and the length of the common rafter in the side. In the case of the roof under discussion the cheek cut for jacks in the end of the roof will be found by taking 8 inches on the tongue of the square and 15 11/12 inches on the body of the square, cutting along the body.

Perhaps a somewhat easier method of finding the length of jacks in unequal pitched roofs is that known as the graphic or picture method. By this method the joint lines of the roof are conceived to be unfolded into a horizontal plane. Knowing the true lengths of the common rafters and the hip and knowing the distance on the plate from the corner where the hip rests to the foot of the common rafter on either side, it is an easy matter to draw these two triangles. If drawn to scale and lines spaced to represent the jack rafters, these lines will not only give the true lengths of the jack, but a bevel or steel square laid upon the drawing will give the true bevel for the various cuts as shown in our sketch. Permit us to say in closing that every carpenter and builder in America should be a subscriber to the AMERICAN BUILDER. This publication, instead of giving to its readers a mass of reading not related to the builders' problems, brings to him every month the very information which fits his requirements and the very latest in the building field.

M. RAY DARLING,
Manager North Missouri Lumber Company.

✣

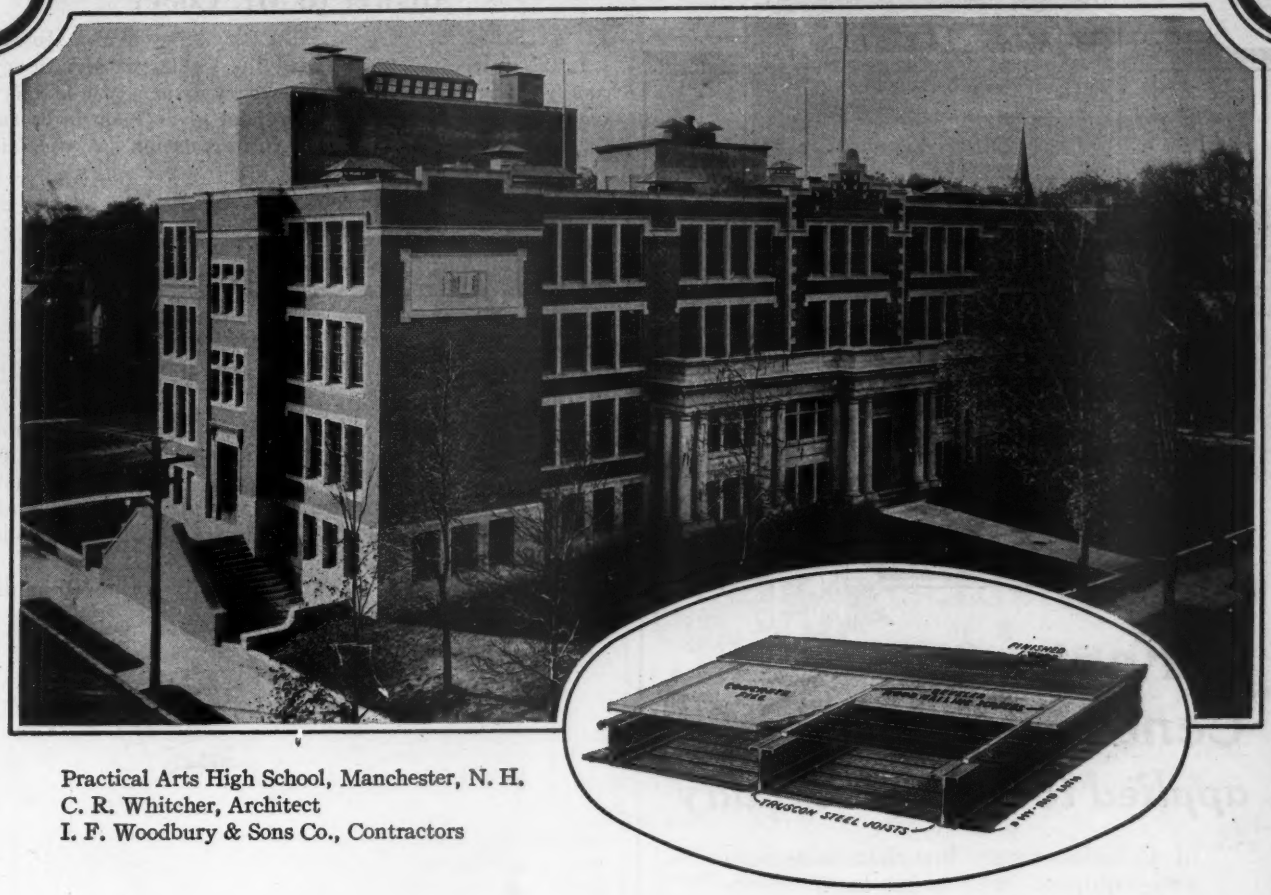
Safe to Let Concrete Pools Freeze?

To the Editor: Chicago, Ill.

In the past two months there have been two articles concerning the advisability of allowing concrete swimming pools to freeze over. In the issue of "Engineering News-Record" for December 27th, an article discussed the theory of the development of ice pressure against vertical walls of concrete swimming pools and coincides with our views on this subject.

As yet, authorities and officials in charge of concrete swimming pools are not fully agreed as to the advisability of allowing them to freeze over during the winter months. On the other hand, we have never found any examples where concrete pools, well built and properly designed, have been injured by pressure of ice. In several cases mentioned in the above article referred to, concrete pools have been allowed to freeze over, the ice reaching a thickness as much as 18 inches with no apparent damage resulting to the pool.

W. E. HART,
Manager Structural Bureau, Portland Cement Association.



Practical Arts High School, Manchester, N. H.
C. R. Whitcher, Architect
I. F. Woodbury & Sons Co., Contractors

What is Underneath the Surface?

WHAT is underneath is more important than what is on the surface. Every architect realizes that the fundamentals (good construction) come first; design, color treatment and finish second.

Truscon Steel Joists are the factors which give to the structure that everlastingly good construction which is the pride of both architect and owner.

They were designed to furnish supporting members which may be used in the permanent, fireproof construction of floors and non-bearing partitions of light occupancy buildings; such as apartment houses, schools, hospitals and office buildings.

Truscon Steel Joists are economical because they eliminate all form work even to temporary supports. Joists can be handled easily and speedily. No expensive hoisting equipment is necessary. They reduce amount of concrete to be handled and save labor and equipment.

The Practical Arts High School, illustrated above, is one of a great number of public buildings where Truscon Steel Joists insure complete satisfaction, not only when new but during the years to come.

Our Truscon Steel Joist Data Book contains a great deal of information of real interest to you. May we send you a copy?

TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO

Warehouses and Sales Offices from Pacific to Atlantic. For addresses see phone books of principal cities. Canada: Walkerville, Ont. Foreign Div.: New York.

Leading manufacturers of Reinforcing Steel, Standard Steel Buildings, Steel Windows, Metal Lath, Steel Joists, Highway Reinforcement, Concrete Inserts, Pressed Steel Stampings and Foundry Flasks.

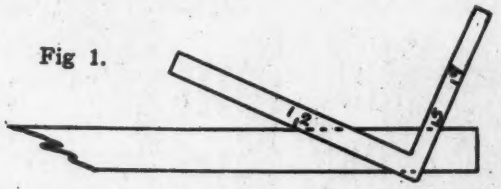
TRUSCON AND NATIONAL STEEL JOISTS

Answer to Mr. Cooey

To the Editor: Kiron, Iowa.

It has interested me to read the replies of Mr. Cooey's roof problem given in the February issue. While this is not a difficult problem yet the replies given seem to be such that some thought is required in its solution. A very simple and easy method of finding the cut required is as follows:

Fig 1.



Using the pitch as given by Mr. Cooey, lay the square on the rafter using the figures 5 and 12, and mark along tongue of square as shown in Fig. 1. Move square along this mark down to 9, then lay a straightedge or another square on figures 9 and 12 and draw line which is required cut, Fig. 2.

To find the length of the 5 in 12 rafter seems to be difficult as I have not seen a correct solution. By trial I find the run of 5 in 12 rafter will be 13 feet 6 inches. The run of the 9 in 12 rafter will be as much less as the width of the porch, in this case 6 feet. Both rafters will meet at a common point or at an equal rise. In case of the 5 in 12 rafter with a run of 13 feet 6 inches the rise will be 13 feet 6 inches times the rise per foot which is 5 inches, equals 67½ inches. The run of the main rafter to same point is 13 feet 6 inches less width of porch (6 feet) equals 7 feet 6 inches. The rise is 9 inches per foot of run, therefore the rise will be 7 feet 6 inches times 9 equals 67½ inches. This proves the run of the 5 in 12 rafter will be 13 feet 6 inches, and can be found as quickly by trial of different runs as any method of calculation with which but few are familiar.

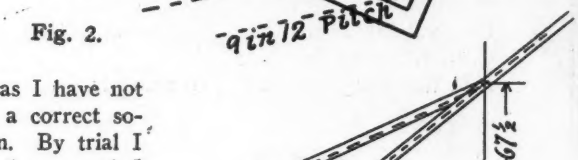


Fig. 2.

Fig. 3.

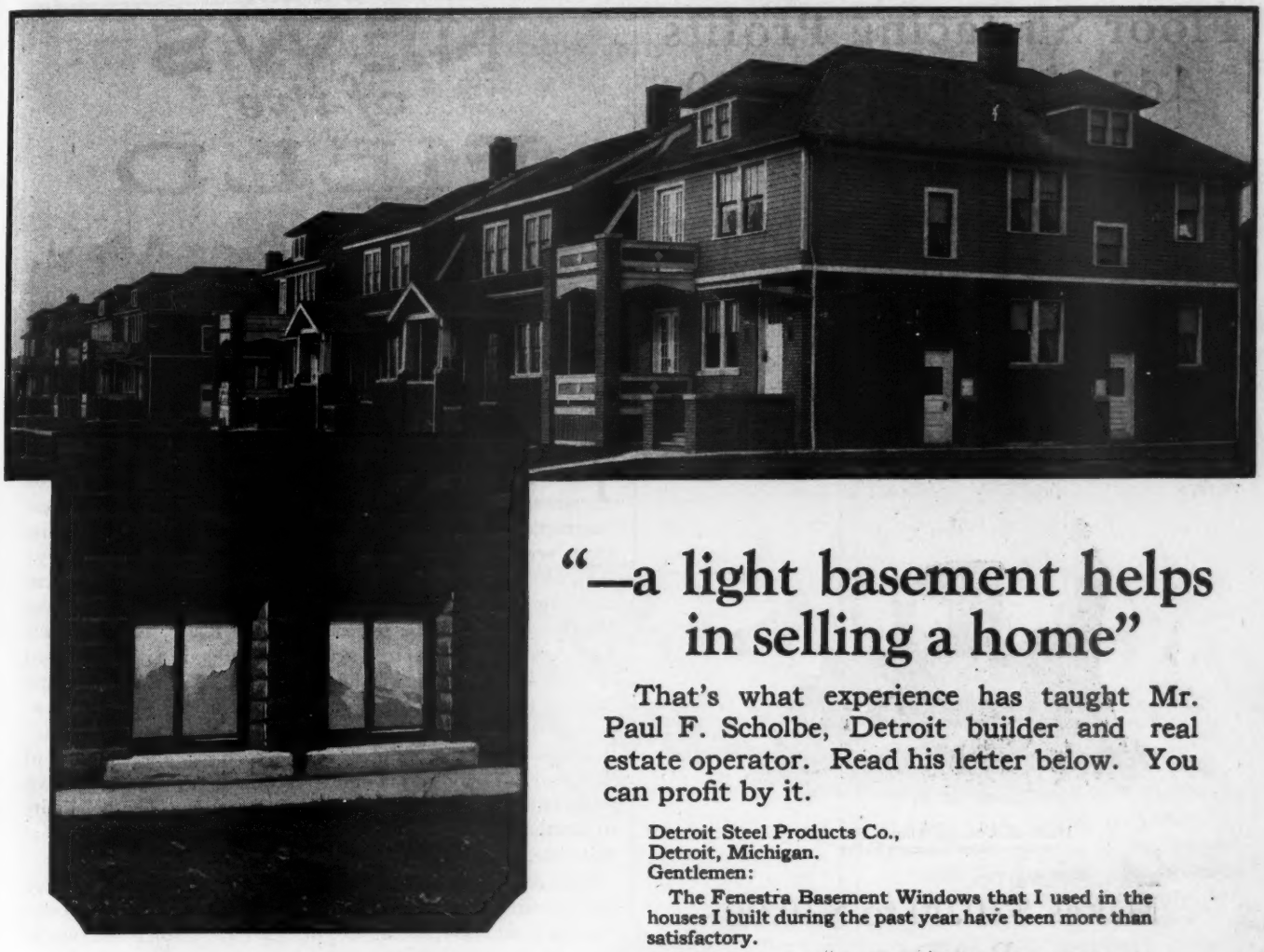
J. A. Engberg.

✣

Interested in Wall Paper

To the Editor: Somerville, Mass.

On the question of wall papers, I find that most builders and general contractors are a little lame. They delegate the job to some jobber and the goods are then supplied at random. In most cases hardly a job is finished right at first. I believe that the various manufacturers would be glad to present their side in the American Builder. We all are interested and none of us knows too much. One thing is to put out the goods, another is to educate the public in their quality and service. Now that the spring is at hand, I think we all would find it of general interest as well as to our mutual advantage. After all, it is the finished job that counts. John P. Downer.



The houses at the top of the page were built by Mr. Paul F. Scholbe, Detroit. Every one is equipped with Fenestra Basement Windows.

"—a light basement helps in selling a home"

That's what experience has taught Mr. Paul F. Scholbe, Detroit builder and real estate operator. Read his letter below. You can profit by it.

Detroit Steel Products Co.,
Detroit, Michigan.
Gentlemen:

The Fenestra Basement Windows that I used in the houses I built during the past year have been more than satisfactory.

They give a great deal more light and ventilation in the basement and a good, light, clean basement helps a great deal in selling a home.

Besides being a better window I can save money on them. There is no planing or fitting to do and no hardware to attach. The mason sets them in the wall and they're done. This saving in labor counts.

That fin on the side is a great improvement. No trouble at all to get a good, tight bond and one that will always stay tight.

As far as I am concerned the old-fashioned wood frame and sash for basement windows are a thing of the past.

Paul F. Scholbe.

You, too, can benefit by the sales argument, "equipped with Fenestra." It will help you sell your houses more quickly. And Fenestra Basement Windows will save you time in building and reduce the labor cost on any house in which they are used. Let us send you "The Hows and Whys of Basement Windows." It tells the complete Fenestra story.

DETROIT STEEL PRODUCTS COMPANY, B-2260 E. Grand Boulevard, DETROIT, MICH.

Fenestra

BASEMENT WINDOWS

Fenestra

The name of the ORIGINAL steel WindoWall.

The symbol of superior QUALITY in material, patented design, workmanship and service.

Floor Surfacing Profits Add $5,000 to $10,000 to Builders' Income

LIVE builders who have recognized and grasped the opportunity that has been opened to them by the development of the electrically driven American Universal Floor Surfacing Machine, are cashing in on their good judgment to the extent of $5000 to $10,000 yearly in added profits.

This is made possible not only because of their ability to save the wages of six hand scrapers for every machine in use, but also because the publicity that has been given to this machine has educated the general public to the advantages of resurfacing old floors and has thereby greatly increased the demand for such work.

Hugh A. Cox, Lakeland, Florida
whose letter appears below

Makes $20.00 to $30.00 Per Day

The best evidence of the wonderful possibilities of increasing profits by going after floor surfacing jobs, lies in the remarkable success of those who have tried it. Read this letter from Hugh A. Cox, Lakeland, Fla.

> "Since purchasing my 'American Universal' floor surfacing machine I average $20 and $30 clear profit every day.
>
> "My 'American Universal' does the work of at least five men, and the quality of the work it turns out is all the advertisement I need for my business.
>
> "You can take it from me, I'd never go back to the old back breaking method of hand scraping for I make too much money with the 'American Universal.'
>
> "I'm busy all the time, get all the work I can do."

J. H. Christensen, Wakonda, S. D., says he is making approximately $25 a day; P. E. DeLong, Norman, Okla., says his American Universal Machine paid for itself twice over in 60 days; J. C. Ivory, Altoona, Penna., tells of making $400 clear on the job. Similar instances can be sighted by the score, many of them in the smallest towns and communities.

Write to the American Floor Surfacing Machine Company, 515 South St. Clair Street, Toledo, Ohio, manufacturers of the electrically driven American Universal Floor Surfacing Machine, for particulars and interesting literature. Further details will also be found in the advertisement appearing on page 157 this issue. Their special proposition to builders is certainly attractive to any live man or firm and will bear the closest investigation.

NEWS of the FIELD

Heaviest January Construction Volume on Record

THE largest volume of winter construction in activity on record has been reported by F. W. Dodge Corporation. Contracts awarded last month in thirty-six states (including about seven-eighths of the total construction of the country) amounted to $301,951,500. This was an increase of 23 per cent over the previous January, and of nearly 1 per cent over December, 1923. This unusual January figure, following the high records of the preceding three months, is to be explained in part by the mild weather conditions which have greatly favored the effort to overcome the usual winter slump. However, it is doubtful if the months yet to come can show such increases as January did over the corresponding months of last year. There was a mild reaction in the spring of last year, followed by this amazing winter revival. The possibility of another spring reaction this year is worth consideration at this time.

Last month's record included: $170,185,800, or 56 per cent, for residential buildings; $38,392,900, or 13 per cent, for commercial buildings; $28,380,600, or 9 per cent, for public works and utilities; $24,769,000, or 8 per cent, for industrial plants; and $18,518,800, or 6 per cent, for educational buildings.

Contemplated new work reported in January amounted to $674,391,700, an increase of 14 per cent over the amount reported in December.

January building contracts in New York State and Northern New Jersey amounted to $108,575,100. The increase over the previous January was 69 per cent, although there was a decrease of 2 per cent from December.

Contracts awarded in the New England States during January amounted to $22,190,000. This was a decrease of 17 per cent from the previous month, and of 3 per cent from the previous January.

January building contracts in the Middle Atlantic States (Eastern Pennsylvania, Southern New Jersey, Maryland, Delaware, District of Columbia, and Virginia) amounted to $34,019,600. The increase over December was 39 per cent; over the previous January a fraction of 1 per cent.

January building contracts in Western Pennsylvania, West Virginia, Ohio and Kentucky amounted to $25,631,400. This was a 29 per cent decrease from the previous month and a 4 per cent decrease from the previous January.

Contracts let in January in the Southeastern States (the Carolinas, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas and Louisiana) amounted to $40,632,000. The increase over the previous January was 60 per cent; over December, 28 per cent.

Construction started during January in the Central West (Illinois, Indiana, Iowa, Wisconsin, Michigan, Missouri, Kansas, Nebraska and Oklahoma) amounted to $66,651,900. This was a 9 per cent increase over the previous month, and a 2 per cent decrease from the previous January.

January building contracts in Minnesota, the Dakotas and Northern Michigan amounted to $4,251,500. This was a 42 per cent increase over the previous January.

Since its introduction early last month (February) a wide-reaching and generous acceptance has been accorded the

New DeVilbiss Spray Gun

Type "A"

—Cut-out View Showing SELF-CENTERING NOZZLE Feature

THIS new Type "A" DeVilbiss Spray Gun, insuring the utmost in value and service, is the biggest single development ever brought out for painting the modern, improved way.

There are 17 important, distinctive Type "A" features, among which are the "Self-Centering Nozzle" and "Quick Detachable Spray Head" here pictured. Many of these features are new, exclusive and unparalleled, while others are the best points of all the spray guns we have made during the past fourteen years—including dozens of experimental types.

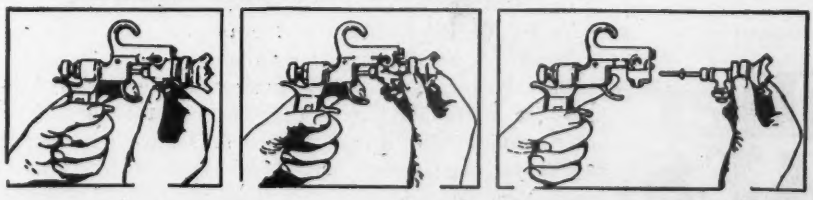
This latest DeVilbiss development has been thoroughly tested and proved: (1) through months of use in the hands of others—producing a new and higher order of results on a variety of regular work; (2) by such severe laboratory trials as automatically pulling the trigger back and releasing it with a snap more than 2,500,000 consecutive times, with paint flowing through the nozzle—without showing any perceptible wear or damage.

The Type "A" Spray Gun takes its proper place as the principal unit of the DeVilbiss industrial finishing room and portable painting equipments. With the result that, in a greater degree than ever, the DeVilbiss System continues to offer the most serviceable and economically operated spraying equipment for every painting requirement.

Full particulars about this new DeVilbiss Spray Gun, and any other equipment information desired, will be gladly mailed to you. Address—

THE DEVILBISS MFG. CO.
238 Phillips Ave. TOLEDO, OHIO

—Showing QUICK DETACHABLE SPRAY HEAD Feature



***DeVilbiss* Spray-painting System**

Beaver Company's Officials See Bright Prospects Ahead

SALES meetings of the Beaver Products Co., Inc., held at the New York, Chicago, Cincinnati and Kansas City District Offices, were attended by all executives of the company and proved very beneficial from every standpoint.

These gatherings made possible a definite presentation of plans for 1924 as well as review of accomplishments in the past year. The officials and salesmen both share the opinion alike that the new year will bring forth increased business and more profit for Beaver dealers. These opinions are the result of the strides made in 1923.

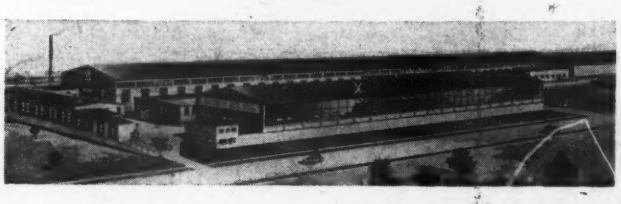
The meetings were addressed by B. L. Worden, the president; J. R. Buckley, assistant to the president; J. H. Anderson, treasurer; H. E. Peterson, sales manager of the Beaver Wall Board Division at Buffalo; P. J. McAllister, in charge of Chicago sales on Vulcanite Roofing; E. H. Belcher, who has charge of Vulcanite Roofing sales at Albany; R. F. Burley, advertising manager; W. H. Henley, manager of the American Cement Plaster Division, and W. B. Henri, of the Henri, Hurst & McDonald Advertising Agency, of Chicago.

✣

Ransome Builds Addition

A NEW building, having a ground area of 320 by 64 feet, and representing a 50 per cent increase in manufacturing floor space as compared with that of the original buildings, has just been added to the plant of the Ransome Concrete Machinery Company, at Dunellen, N. J. Here we have a panorama of the plant as it appears today, the new building being indicated by the cross.

The new structure is of concrete and structural steel, with full-length windows swung from a point 5 feet above the sills to the eaves, and can readily be increased to double its



New Addition to Plant of the Ransome Concrete Machinery Co., Dunellen, N.. J.

present length. It contains two five-ton cranes, traveling the full length and in addition is completely equippd with shears, punching presses, riveting machines, etc., for use on the structural and plate material used in the manufacture of concreting machinery.

✣

The Associated General Contractors Elect Officers

NEWLY elected officers and directors of the Associated General Contractors of America at their convention held recently at Chicago are:

Frederick L. Cranford, Brooklyn, N. Y., president; A. S. Downey, of Seattle, Wash., vice-president at large; Leonard C. Wason, of Boston, and H. H. Wilson, of Harrisburg, Pa., vice-presidents. These officers are to hold office until 1927.

✣

THE Barber Asphalt Company has opened a branch office at 807 Phelan Building, San Francisco, Cal., in charge of Major C. M. Foster, district manager.

Major Foster, who formerly represented the Barber Asphalt Company in Washington, D. C., will direct the sales of street and road materials, Genasco Latite shingles and other prepared roofings of the Genasco line, also Gilsonite, paints and other asphaltic products.

Model Homes at Chicago and New York Shows

THE time has past, according to the Committee of Administration of the Chicago and New York annual "Own Your Home" Expositions, when the national manufacturer considers only the architect, contractor and dealer. Even though he may never sell directly to the public he realizes more and more the importance of so educating the public that they will demand their architects, contractors and dealers specify certain products.

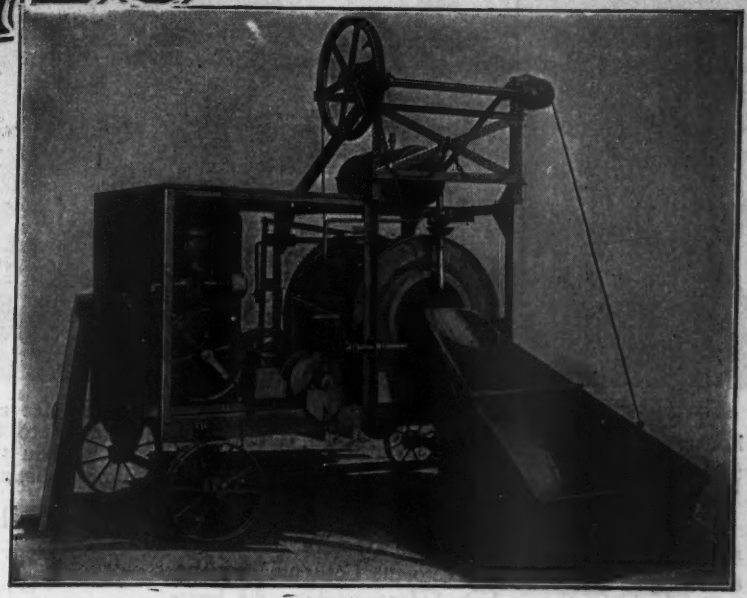
This point of view is evidently shared by many national manufacturers who will exhibit in both cities this spring, and who are now actively co-operating in the plans for the full size feature houses which will be erected on the floor of each exposition.

"Thrift Cottage." Front elevation of the full size five-room stucco house to be built at the Fourth Annual "Own Your Home" Exposition to be held in the Coliseum, Chicago, March 22nd to 29th. Karl Gailbraith, Indianapolis, architect.

These houses, presenting a complete picture of all the exhibits surrounding them, will be finished, furnished and entirely equipped. Each phase of the construction and furnishing is under the direction of the various exhibit committees which are composed of prominent men, representing the allied professions, industries and trades, and every effort is being made to have each house resemble an ideal American home.

Plans for a five-room house of white portland cement stucco on concrete masonry, to be called "Thrift Cottage," submitted by the Architects' Small House Service Bureau have been selected for the Chicago Exposition, March 22 to 29, by the Architectural Committee which is headed by C. Herrick Hammond, member of the American Institute of Architects. These plans were designed by Karl Gailbraith of Indianapolis.

Ransome



7-S Improved Bantam Mixer

The "Daddy" of them all

First in the field and still head of the Bantam family—low priced One Bag Mixers. Holds 10 ft. unmixed—7 ft. mixed. Light weight—easily snaked around job to save wheelbarrow mileage in hauling to and from mixer. Easily loaded on trucks to haul to next job.

So simple a boy could run it—will stand crowding hard when you want to finish a job. Or, it will run along at its regular gait day after day, year in and year out. Probably your neighbor has one of the several thousand in use.

Now is a good time to get the whole story before early summer catches you when you just have to take the first mixer offered. Let's get together or at least get lined up for shooting when summer comes.

RANSOME CONCRETE MACHINERY CO.

1764 Second Street, Dunellen, N. J.

Manufacturers of Mixers, Pavers, Pneumatic Mixers, Chuting Plants, Hoist Buckets, Bins, Cars, Carts, Etc.

5108

Without obligation on my part, please send me information on:—
Ransome Concrete Mixers, sizes, 4-S[ ]; 7-S[ ]; 10-S[ ]; larger sizes[ ]. Steam Drive[ ]; Gasoline Drive[ ]; Electric Drive[ ]. Concrete Chuting Plant for Building ..... ft. long by ..... ft. wide by ..... ft. high. Portable Woodworking Mill[ ].
Name .....Address .....

"The Home That Rent Built." Front elevation of the full size six-room house of white Portland cement stucco on concrete masonry to be built at the New York "Own Your Home" Exposition, to be held in the 69th Regiment Armory, April 19th to 26th. Oscar T. Lang, Minneapolis, architect.

The design includes an old fashioned garden which will be reproduced in every detail and the rear of the house and its garden will face the entrance to the Coliseum so visitors will walk along the flower beds before reaching the house.

Lionel Robertson, art director of the Tobey Furniture Company of Chicago, chairman of the Furniture and Interior Decorations Committee, and assisted by his members, will have charge of the furnishing and decorations used and Miss Margery Currey, representing the American Art Bureau, will select the pictures. This committee is also cooperating on the furnishing of the "Home Electric," a series of rooms in which the most modern electrical equipment will be displayed against correct and attractive surroundings. The gas and electrical appliances, fixtures and labor-saving devices will be selected from exhibitors in the various divisions.

A six-room stucco house of the English cottage type will be erected at the New York Exposition, April 19-26. It was designed by Oscar T. Lang, of Minneapolis, and submitted originally in the "Own Your Home" Exposition Architectural Small House Competition in 1921, and selected by the Architectural Committee of the New York Exposition which is headed by Henry Atterbury Smith, A. I. A., internationally known architect. This house will be known throughout the exposition as the "House That Rent Built" in an effort to show the public that rent saved will eventually pay for a home.

✣

Milwaukee Home Building Exposition

THE second annual home building exposition of Milwaukee is to be given at the Milwaukee Auditorium from March 15 to March 20.

✣

Fourth Annual Exposition at Boston

BOSTON will celebrate its fourth annual Home Beautiful and Building Trades Exposition from April 26 to May 3.

CON-SER-TEX

A DURABLE, specially weatherproofed fabric used in fine buildings for outside porch floors and roofs.

It is unequaled for valleys, hips, gutter linings, and durable flashings.

CON-SER-TEX will not crack, stretch, peel, leak or rot. The very thorough and careful scientific treatment prevents these defects.

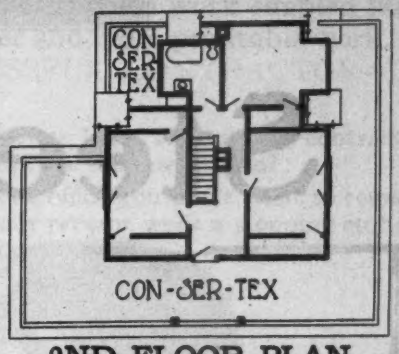
A delight to home owners, knowing that now it is possible to have a very durable, attractive porch covering at a reasonable cost.

The ease of handling and laying CON-SER-TEX has won high favor with every builder of better homes and buildings. See page 154 of this issue. Write for Booklet B "ROOFING FACTS AND FIGURES."

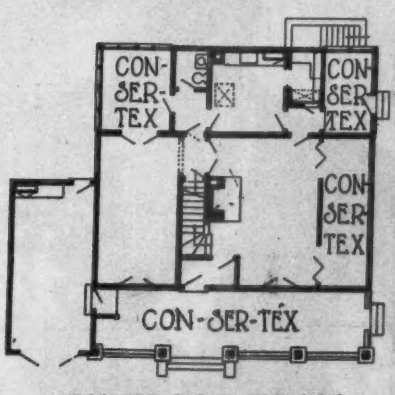
Wm. L. Barrell Co. of New York, **Inc.,**
50 LEONARD STREET, NEW YORK CITY.

Chicago Distributors
Geo. B. Carpenter & Co.
420-40 N. Wells Street

California Distributors
Waterhouse-Wilcox Co.
San Francisco & Los Angeles



2ND FLOOR PLAN



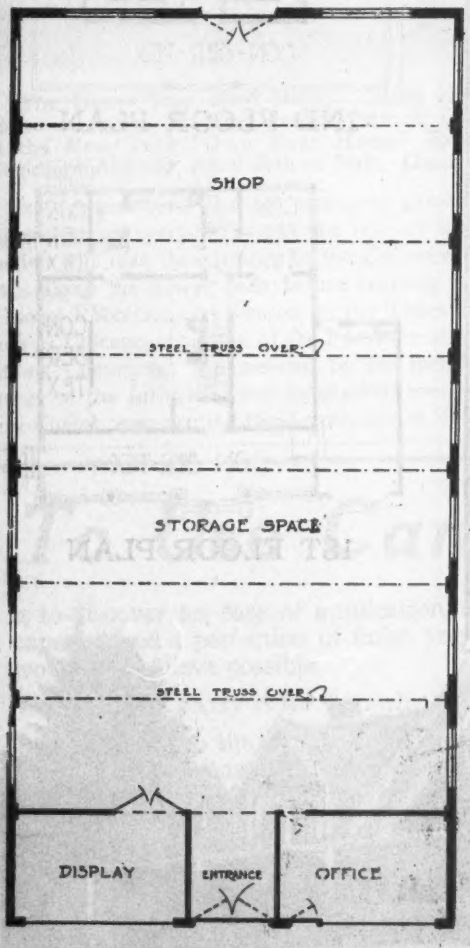
1ST FLOOR PLAN

Cross Section Showing No. 728 Bowstring Truss

Steel Service

for

Progressive Contractors



·FLOOR· PLAN·

Our Engineering Department will help you

free of charge to secure desirable contracts for **Garages—Store Buildings—Warehouses** and **Small Factory Buildings**—by submitting designs that are features from the standpoints of practicability and economy, and furnishing estimates on the material required in our line.

International Steel & Iron Co.

Address Department 18
Evansville, Ind.

Write for "Garage Illustrations" showing at least 50 modern buildings designed by us.

Complete Modern Store Fronts

Steel Sash	Freight Elevators	Anchors
Steel Lumber	Skylights	Columns
Steel Ceilings	Roof Ventilators	Marquise

Exterior View of No. 2254 Garage

Open to New and Old Subscribers--Renewals Extended for One Year

Make Big Money

by being a

Successful Contractor--Big Architect--Master Builder

IF YOU take one moment now you can easily recall at least one man who reminds you of this picture. Day after day he goes steadily forward, doing larger work, becoming more prosperous. When he had the chance he seized it. He rose above men no better, no smarter, no more able than he because he early realized that study of his chosen work enabled him to forge ahead. One by one he passed his fellow workers to better and more profitable work. He heeded the beckonings of opportunity. He is THE SUCCESSFUL CONTRACTOR—THE BIG ARCHITECT—THE MASTER BUILDER.

You don't want to stick to the plane, the saw and the hammer all your life. If you are a contractor or a builder don't you want bigger work than just barns, sheds and now and then a house or two?

If you are a draftsman, an apprentice or assistant in an architect's office you don't want to remain in your present position any longer than you have to; you want to make your present work a stepping stone to a bigger position, which will be your life's work.

You don't want to stand still and see your friends step ahead to enjoyable, well paid, independent work simply because they "snap up" the same opportunities, the same chances that are offered you. It is the natural ambition of man to not only keep up but step ahead of his fellows.

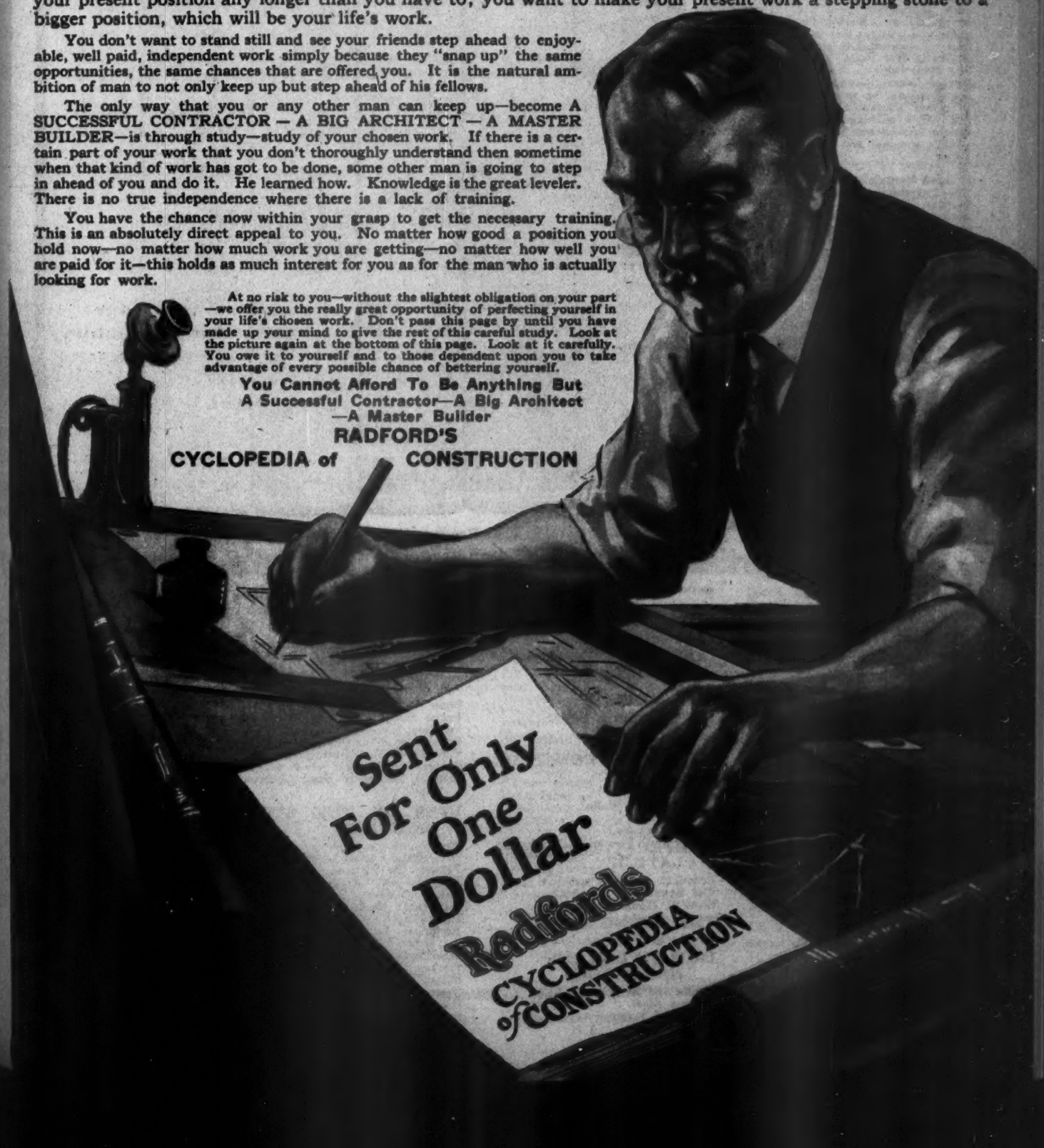
The only way that you or any other man can keep up—become A SUCCESSFUL CONTRACTOR — A BIG ARCHITECT — A MASTER BUILDER—is through study—study of your chosen work. If there is a certain part of your work that you don't thoroughly understand then sometime when that kind of work has got to be done, some other man is going to step in ahead of you and do it. He learned how. Knowledge is the great leveler. There is no true independence where there is a lack of training.

You have the chance now within your grasp to get the necessary training. This is an absolutely direct appeal to you. No matter how good a position you hold now—no matter how much work you are getting—no matter how well you are paid for it—this holds as much interest for you as for the man who is actually looking for work.

At no risk to you—without the slightest obligation on your part—we offer you the really great opportunity of perfecting yourself in your life's chosen work. Don't pass this page by until you have made up your mind to give the rest of this careful study. Look at the picture again at the bottom of this page. Look at it carefully. You owe it to yourself and to those dependent upon you to take advantage of every possible chance of bettering yourself.

You Cannot Afford To Be Anything But
A Successful Contractor—A Big Architect
—A Master Builder

RADFORD'S
CYCLOPEDIA of CONSTRUCTION



Open to New and Old Subscribers-

RADFORD CYCLOPEDIA OF BUILDING

CHICAGO
NEW YORK

SENT FOR ONLY $1.00 Carpentry, Building

Express Charges Prepaid.

The best tool in any workman's kit is books—practical books that tell how to do work in the easiest, the best and latest ways; books that tell you all about each and every feature of your work to the smallest detail; books that keep you in touch with the biggest and smallest details of building construction. This is an opportunity of a lifetime to get a set of books that will tell you everything about building construction in all its branches. Read our guarantee below.

My Personal Guarantee

If you do not find the Radford Cyclopedia of Construction just as advertised and entirely satisfactory, or if for any reason whatsoever you do not wish to keep it after having had the free use of it for five days, I personally guarantee to refund your deposit immediately upon receipt of such information from you. I guarantee to prepay all carrying charges. I guarantee you will get this low price if ordered now. I guarantee to send you Three Plan Books of 300 Plans. I guarantee to furnish you with a complete set of blue printed working plans and type-written specifications, as per terms in this offer. I further guarantee you will receive one full year's subscription, twelve numbers, to the American Builder, conceded the world's greatest and best known Building Paper.

Don't hesitate a moment to hold me to this guarantee and notify me within the five-day limit, as we want every set of books we put out to remain only in the hands of appreciative and enterprising purchasers, as this price is made with the sole purpose of placing a set in your town to which we may refer later, and with the understanding that you write us your opinion of it to help secure other business at our regular price.

President and Editor-in-Chief.

WE PAY EXPRESS

12 Volumes Sent by Prepaid

Exact Photographic Reproduction—Bound in Red Morocco Grain Fabrikoid—

Partial Table of Contents—Radford's Cyclopedia of

THE ELEVATION.
Important Principles.
Intersections and Developments.
Essentials of Success.
Lettering.
Blue-Printing.
Architectural Drawing.
Working Drawings.

PERSPECTIVE DRAWING.
Pen and Ink Rendering.

HOUSE FRAMING.
Good and Faulty Construction.
Construction of Sills and Joists.
Studding.
Cornice.
Porch Construction.
Window and Door Openings.
How to Attach Woodwork to Masonry Walls.

ROOFS AND ROOF CONSTRUCTION.
Lean-to and Saddle Roofs.
Forms of Roof Trusses.
Stresses on Roofs.
Strength of Beams.
Dimensioning Struts, Tie-Beams, etc.
Roof Braces.
Rafters and Purlins.
Hips and Valleys.
Wall Plates.
Jack Rafters.
Dormers.
Octagonal or Hexagonal Roofs.
Use of Queen Rafter.
To Support a Gambrel Roof.
Construction of Circular Porch.

CONSTRUCTION OF STAIRS.
Pitchboard.
Treads and Risers.
Housed and Open Strings.
Wall Strings.
Straight and Curved Stairs.

BUILDING CONSTRUCTION.
Foundations.
Materials for Walls.
Girders.
Cellar Windows.

TEMPERATURE REGULATION.
Practical House Plumbing.
The Sewer and Connections.
Sizes of House Drains.

THE PIPING SYSTEM.
Layout of Plumbing.

HOW TO USE THE HANDBOOKS.
Rivets and Riveting.
Testing Steel.
Factor of Safety.

CLASSES OF STRUCTURAL MEMBERS.
Design of Girders.

MANUFACTURE OF STRUCTURAL MEMBERS.
Shop Work.
Forge Shop.
Painting Structural Steel.
Cost of Steel Structures.
Erection of Steel Buildings.
Bridge and Viaduct Construction.
General Theory of Steel Construction.

USES OF THE STEEL SQUARE.
History of the Square.
Uses of the Figure, Lines and Scales
Testing the Square.
Diagonal and Octagonal Scales.
Board, Plank and Scantling Measure
Adjustable Fence.
Describing Curves with Square.
To Find Length of Braces and Other Timbers.
Steel Square in Roof Framing.
Pitches.
Rafter Cutting.
Common and Jack Rafters.
Hips and Valleys.
Projecting Cornice.
Finding Bevels.
Heel and Plumb Cuts.
Linear Board Measure.
Framing a Circular Porch.
Framing a Gambrel Roof.
Miter Cutting.
Hip Roof Framing.
Finding Length of Rafters.
Octagonal and Hexagonal Roofs.
Bevels for Cuts.
Hoppers and Hopper Bevels.

THE SQUARE IN STAIR BUILDING.
Strings and Finishes at Top and Bottom.
Treads and Risers.
Balusters and Brackets.
Square of the Newel
Combination Squares.
Universal Square.
Bevel Try-Squares.
Topp's Framing Tool.

KEY TO THE STEEL SQUARE.
Rafter Table.
The Revolving Disc.
Side Cuts.
Table of Tangents.
Miters for Polygons.
Five-Pointed Star.
Framing Timbers at any Pitch.

-Renewals Extended for One Year

CONSTRUCTION and Architecture

RADFORD
CHICAGO
NEW YORK

SENT FOR ONLY $1.00

Express Charges Prepaid.

WHAT YOU GET: Twelve Great, Big, Massive Volumes, over 5,000 pages, 3,200 specially drawn illustrations, charts, diagrams, working drawings, besides hundreds of full-page half-tone plates and zinc etchings; Three Plan Books of over 300 plans of buildings; one complete set of working blue prints and complete typewritten specifications—your own choice; and a full year's subscription to that great, big paper, "The American Builder."

Express for Only $1.00

How to Get Them

All you have to do is to write your name and address plainly on the coupon at the bottom of the next page, pin a dollar bill to it and mail it to us. We trust you as a member of the building trade and send you the entire set of books immediately. We prepay all express charges and thus it does not cost you one penny for examination. When you get the books they are yours for five days to examine them just as leisurely and as carefully as you please. You have the privilege of calling in your family, your friends, your associates to look them over and help you to make a decision. After you have had the chance to go through them page by page, if you should decide that you do not want to keep the books, all that you have to do is drop us a postal telling us so. We will immediately send back to you the payment of $1.00 which you sent us with the order blank. We do this without any argument, without any red tape and without any haggling whatever. Furthermore, we will remove the set of books without cost to you at once. Therefore, you are nothing out on the deal, you have not spent a cent, you have lost nothing whatever.

Examine Books at Our Expense

Oriental Gold-leaf letter. Actual size, 6 x 9 inches. 5,000 pages, 3,000 illustrations

Construction—This Is a Brief List—See Books Yourself

Polygon Family Circle.
Laying Out a Circular Frame.
Ornamental Figures in Miter Work.
Laying Off Degrees With Compasses.
Possibilities of the Steel Square.

HOUSE SANITATION.

Heating and Ventilation.
Modern Heating Apparatus.

HOT-AIR HEATING.

Size of Furnace Required.
Location and Size of Flues and Registers.
Heat Pipes.
Cold-air Supply.
Air Cleansing.
Furnace Ventilation.

ELEMENTS OF STEEL CONSTRUCTION.

The Raw Material—Iron Ore.
Properties of Ore.

MANUFACTURE OF CAST IRON.

The Blast Furnace.
Sand and Machine Casting.
Grades of Cast Iron.
Wrought Iron.

COVERING OF ROOFS.

Method of Shingling.
Covering of Circular Dome.

MASONRY CONSTRUCTION.

Easy Method of Testing Stones.
Results of Reliable Tests on Various Kinds of Building Stone.
Kinds of Stone Work.
Rubble Masonry.
Cut Stone.
Bonds and Joints.
Mortar for Stonework.
Stone Cutting.
Stonecutters' and Masons' Tools.
Dictionary of Masonary Terms.
Foundations.
Walls.
Abutments.
Culverts.
Piers, Arches.

BRICK AND BRICKWORK.

Manufacture of Brick.
Brick Making Machinery.
Effects of Manufacturing Processes.
Color of Brick.
Strength of Brick.
Porosity, Density, Etc.
How to Test Brick.
Results of Standard Tests.
Mortar for Brickwork.
Bricklayers' Tools.

REINFORCED CONCRETE.

Advantages of Reinforced Concrete.
Durability.
Fire-resisting Properties.
General Principles of Reinforced Concrete Design.
Cost of Reinforced Concrete.

REINFORCED CONCRETE BRIDGES.

Piers.
Abutments.
Viaducts.
Irrigation Canals.
Headgates and Flumes.
Reservoirs.
Water Tanks.
Sea Walls.
Harbor Works.
Breakwaters.
Lighthouses.
Concrete Telegraph Poles.
Concrete Railroad Ties.
Electric Light Standards.
Concrete Coal Hopper.
Concrete Garage.
Bath House.
Concrete Sinks.
Mausoleums.
Burial Vaults.
Concrete Cafes, Etc.
Useful Tables.
Useful Rules.
Useful Hints, Suggestions, Etc.

MANUFACTURE OF CONCRETE.

Proportion for Mixing.
Hand Mixing.
Machine Mixing.
Continuous Mixing.
Batch Mixing.
Wetness of Mixture.
Leanness or Richness of Mixture.
Mixing Tools.
Time of Setting.
How to Regulate Setting.
Difference between Setting and Hardening.
Characteristic Properties of Concrete.
Strength.
Durability.
Fireproofing.
Cost of Concrete.
Standard Specifications for Portland Cement, Sand, Etc.

PLAIN CONCRETE CONSTRUCTION.

Wood Forms.
Metal Forms.
Construction of Forms.
Collapsible Metal Forms.

CONCRETE HOUSES.

Types of Design.
Monolithic Construction.
Concrete Block Houses.
Concrete Brick Construction.
Plaster Work and Stucco.
Pebble Finish.
Foundations.

Open to New and Old Subscribers--Renewals Extended for One Year

The MAN Who Stood Still!

THE MAN WHO STOOD STILL. He is one of the tragic figures of life. Day after day he follows in the same groove. In good health and in bad he has to work. Growing older and older he sees ahead no relief from the ceaseless toil that he has known all through life. There is no opportunity for him to cease a single day the everlasting "humdrum" that he has known for so long. When he had the chance there was no Cyclopedia such as this, at so low a cost, and so easy to get. He allowed other men—the men who had studied and knew how—to pass him by. They left him standing on the threshold of success. But they left him behind. He heeded not the beckonings of opportunity He is THE MAN WHO STOOD STILL.

Don't Be The Man Who Stood Still—Be A Successful Contractor—A Big Architect—A Master Builder

"If I only had this set of books twenty or thirty years ago, they might have changed my whole life. The knowledge in the big Cyclopedia would have enabled me to increase my earning power, to take big work, paying big money and possibly have helped me to make a fortune in the building business."

SPECIAL FREE PREMIUMS

IF YOU ORDER AT ONCE

If we receive your order at once, we will send with this Cyclopedia one year's subscription (12 numbers) to the American Builder, the world's greatest building paper. We will send free of all extra cost, one complete set of blue printed working plans and typewritten specifications of any of the houses illustrated in three Books of Plans, which we also send to you free of cost, so that you may make your selection. These plans and specifications are as complete as those charged $50.00 to $75.00 for by many architects. These plans will be very valuable to contractors, builders and draughtsmen. The only reason we can offer to do this is because we have the largest architectural establishment of its kind in the world, and are able to produce these complete blue printed working plans and specifications at the very lowest possible price, and to the purchasers of this big Cyclopedia we are willing to give the benefit. Without American Builder $1.00 less.

We make this liberal offer because we want you to have our Cyclopedia, and we believe by having it in your hands we will have a greater opportunity of disposing of others in your locality, and it is with the distinct understanding that if it is entirely satisfactory, you will write us a letter and assist us in making other sales.

Our special price to you for advertising purposes is only $37.50, and our liberal terms are only One Dollar down and $3.00 per month until the amount is paid. We give you five days to look the books over and see if they are entirely satisfactory. If you conclude not to keep them, we will refund your money and pay the express charges both ways. Order today. Fit yourself at once to increase your earning power.

The Radford Architectural Co.
1827 Prairie Ave., Chicago, Ill., U. S. A.

PIN A DOLLAR BILL TO THIS COUPON AND MAIL TODAY

NO-RISK GUARANTEE COUPON

A. B.
3-24

Radford
Architectural
Company
1827 Prairie Ave.,
Chicago

Please send me, express prepaid, your 12-volume Cyclopedia of Construction, for five days' free examination, with privilege of return at your expense. I enclose $1.00 deposit which you agree to return if I decide not to keep the books after examination. If I keep the books, I will pay $3.00 a month until the special price, $37.50 is paid, otherwise I will notify you within five days after receipt of books.

Your offer also includes Three Big Plan Books (over 300 designs) and one full year's subscription to the American Builder. You also agree to furnish set of Blue Prints and Specifications, if ordered within 2 months after acceptance of books.

Name .....

Street .....

Town .....State .....

West of Rocky Mountains and Canada $3.00 with this order.
Full amount must accompany all Foreign orders.

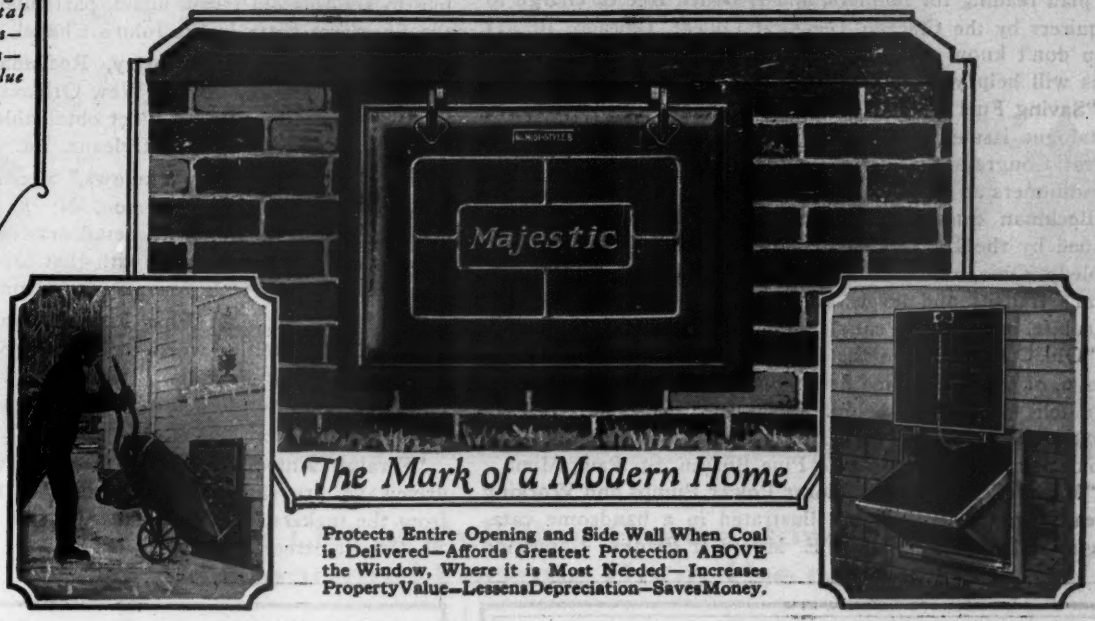
Majestic Coal Window

Majestic Quality

Building Specialties

Underground Garbage Receivers—Package Receivers—Metal Basement Windows—Fire-place Dampers—Ash Dumps—Flue Clean out Doors.

Sold by **5,000** *Hardware, Building Supply, & Lumber Dealers Everywhere*



The Mark of a Modern Home

Protects Entire Opening and Side Wall When Coal is Delivered—Affords Greatest Protection ABOVE the Window, Where it is Most Needed—Increases Property Value—Lessens Depreciation—Saves Money.

GUARANTEED BREAK-PROOF

Like other articles that are noted for quality, the Majestic is known everywhere as the best coal window, because (1) it is made of Certified Malleable Iron and Keystone Copper Steel, Guaranteed Break-proof (2) it is self-locking and burglar-proof (3) it is superior in design, quality and workmanship—yet it costs you no more. That's why Majestic leads the world in coal windows.

There are eight different styles of Majestic Coal Windows and Coal Chutes—styles and sizes for homes, stores, business buildings, apartments, etc. Write for catalog and prices.

You don't want this!

The ordinary basement window soon looks like the one at the left when used as a coal window. Wall, sash and frame battered, broken and disfigured. The Majestic Coal Window eliminates this.

The door, frame or hinges of the cast iron coal window frequently break under the heavy impact of coal as it is delivered—see illustration at the right. The Majestic Coal Window is break-proof.

Nor this one, either!

THE MAJESTIC COMPANY, HUNTINGTON, IND.

Branches and Warehouses, 406 Scarritt Arcade Bldg., Kansas City, Mo.—6024 Grove Ave., Chicago, Ill. 816 Security Bldg., Minneapolis—Westlake Ave. and John St., Seattle—3227 Larimer St., Denver

Canadian Factory THE GALT STOVE & FURNACE COMPANY, Ltd., Galt, Ont.

Majestic Quality

Costs You No More to Have the Best

Majestic Quality

"Modern Practice in Establishing Lines and Levels—F Series," is a note book issued by the Warren-Knight Company, 126 North Twelfth Street, Philadelphia, Pa. The calendar and cross-section pages are useful to builders and contractors and offer a convenient means for preserving notes and costs, estimates, measurements, etc.

"Bommer Spring Hinges Are the Best" seems like a good positive statement for a catalogue title. Experience of most builders with these fine spring hinges seems to back up this title, the book itself being obtainable from the Bommer Spring Hinge Company, Brooklyn, N. Y.

"How to Read Blue Prints," by H. R. Bigelow, is a lesson in plan reading for builders, and is issued free of charge to inquirers by the Chicago Technical College, Chicago, Ill. If you don't know what this good school can do for a pupil this will help you find out.

"Saving Fuel in 4,350 Chicago Buildings," is an attractive catalogue issued by the Wolff Coal Saver Company, 1330 West Congress Street, to show the worth of Wolff draft conditioners as a coal-saving device.

Beckman Surveying Instruments, Catalogue No. 8, is issued by the L. Beckman Company, 1002 Jackson Street, Toledo, Ohio, and illustrates and describes this well-known firm's transits and levels, sold on the guarantee of giving absolute, unqualified satisfaction.

"Old Canterbury on the Quinnebaug." This is Vol. IX, No. 6, of the White Pine Series of Architectural Monographs, and tells of one of the hill towns of Connecticut. Worth looking at, you architects and builders, for its wealth of Colonial architecture. White Pine Bureau, St. Paul, Minn.

"Myers' Self-Oiling Bulldozer Power Pumps and Working Heads" are described and illustrated in a handsome catalogue at hand from the F. E. Myers & Brother Company, Ashland, Ohio. Whatever water is used in sufficient quantity to justify a power pump, there is a Myers ready.

"Things You Ought to Know About Casement Windows" is a booklet issued by the Casement Hardware Co., 230 East Ontario Street, Chicago, Ill. It shows how buildings in various architectural styles are improved exteriorly and interiorly by the use of casement windows, and how Win-Dor Casement Window operators aid in making such weather-tight and practical.

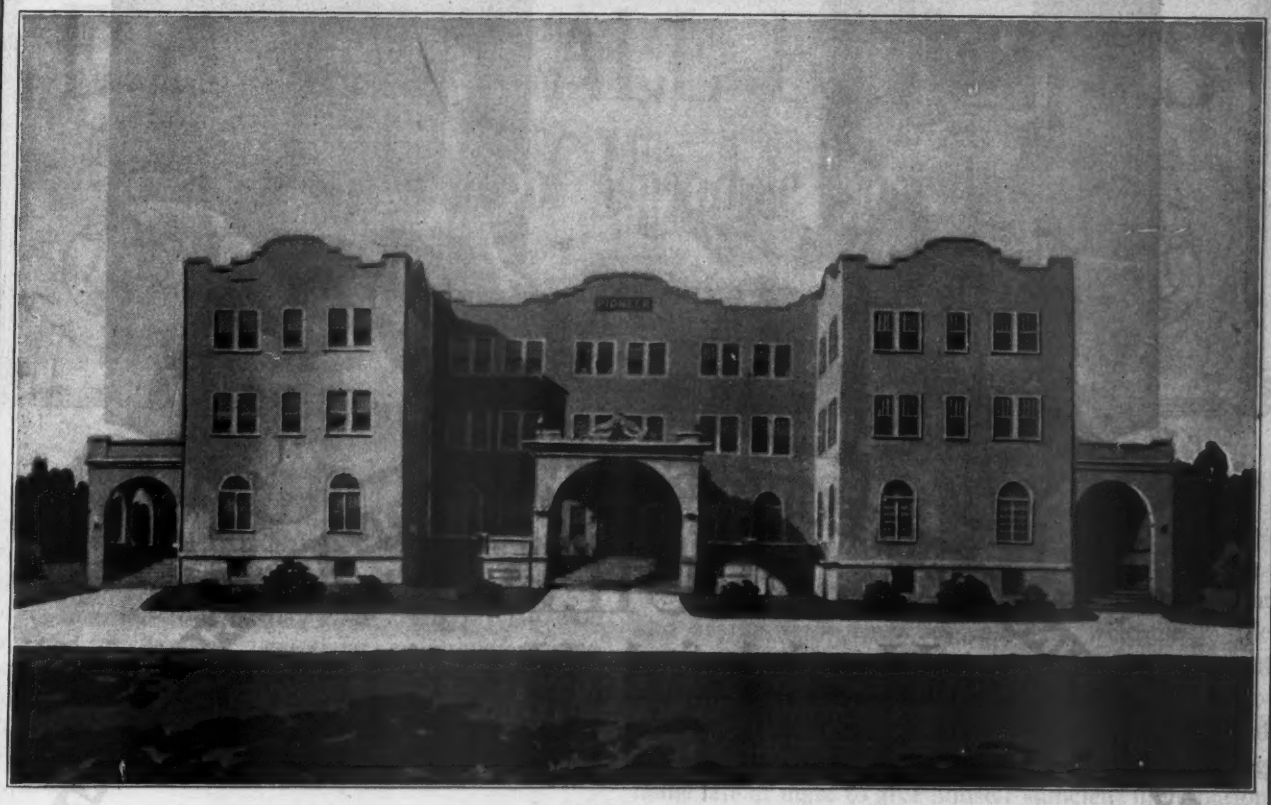
"Common Clay" is again at hand from the American Terra Cotta & Ceramic Company, 1701 Prairie Avenue, Chicago, Ill. We think most architects and builders will like to see this old friend again, particularly in showing of the fine terra cotta in St. John's Chapel, Springfield, Ill.

"Highlights of the Forestry, Reclamation and Home-Making Conference," held at New Orleans, November 19 to 22, 1923, is a stimulating booklet obtainable from the Southern Pine Association, New Orleans, La.

"Boca Steel Basement Windows," as made by the Bogert & Carlough Company, Paterson, N. J., are described in a well-gotten-up folder, with detail drawings. Worth sending for, as they fit in nicely with that brick, stone, cement, tile or terra cotta wall you may be planning.

"Radio Aerial Mast Pipe Fixtures" are illustrated and described in a folder worth reading in view of the ever-increasing interest in radio. Helps you plan the homes you build for radio aerial. The Direct Sales Company, 431 S. Dearborn Street, Chicago, Ill.

"Feralun Anti-Slip Treads," for stairways, ramps and driveways, are shown and described in folders obtainable from the makers, the American Abrasive Metals Company, 50 Church Street, New York, N. Y.



An Imposing List of Building Contractors Have Based Fame and Fortune Upon Use of—

ASBESTONE EVERLASTING STUCCO

Success comes with the cumulative reputation for good work plus materials that stand the test of time.

Asbestone Exterior Stucco—Interior Plaster

has long been accorded first place in estimation of the trade, because of its unvarying, dependable high quality.

Its magnesia base gives those properties now most highly esteemed for plastic construction. Fire-proof in itself, resilient, and adapted to simple renovation, or exacting architectural demands, it offers first choice in ease of handling and in gratifying results. It will not crack from ordinary settling strain; nor chip.

Asbestone Stucco is Guaranteed in Quality by Daily Laboratory Tests

A WIDE RANGE OF SELECTION IN PEBBLE-DASHES—THRICE SCREENED

Please make inquiry of your Building Supply Dealer. If there is no dealer in your district, write us direct for full particulars, samples and prices.

MULLER ASBESTONE GUARANTEED PRODUCTS TRADE MARK

FRANKLYN R. MULLER, Inc.

Manufacturers of Magnesia Stucco and Flooring

208 Madison St. Waukegan, Illinois

ELECTRIFY ALL BUILDINGS

A Department of Up-to-date Information for all who Plan and Build

Our Home Electrical No. 12

New England Summer Home Demonstrates Value of Electricity-a-plenty

EDITOR'S NOTE: *The Electrical Section of the* AMERICAN BUILDER *is written and edited by the experts of the Joint Committee for Business Development, an institution which comprises representatives of electrical contractors, dealers, jobbers, manufacturers and central station organizations. It functions through an Executive Committee and a Headquarters staff, office 29 West Thirty-ninth street, New York, H. A. Lane, Director.*

NO. 12 of our series of Homes Electrical is a decidedly attractive dwelling from the standpoint of roominess and comfort. There are five rooms on the first floor, and the second contains three bedrooms, a bath and a sleeping porch. All the rooms are unusually large and roomy, and when fitted up with an adequate electrical installation the house should be most livable.

The small entrance porch at the front of the house is fitted up with a pair of lights, one on each side of the door, giving an attractive appearance to the front and at the same time bespeaking a welcome to the arriving guest. Arrangements are provided to control these lights both from inside the door and from outside. This is done by means of a 3-way switch and this provides great convenience. It enables one coming home late at night to give himself sufficient illumination to enable him to find the keyhole with little or no trouble, and in addition he can turn it out after he has entered, without the necessity of going out again to extinguish it. It also will give him sufficient light to find the switch which turns on the hall lighting unit.

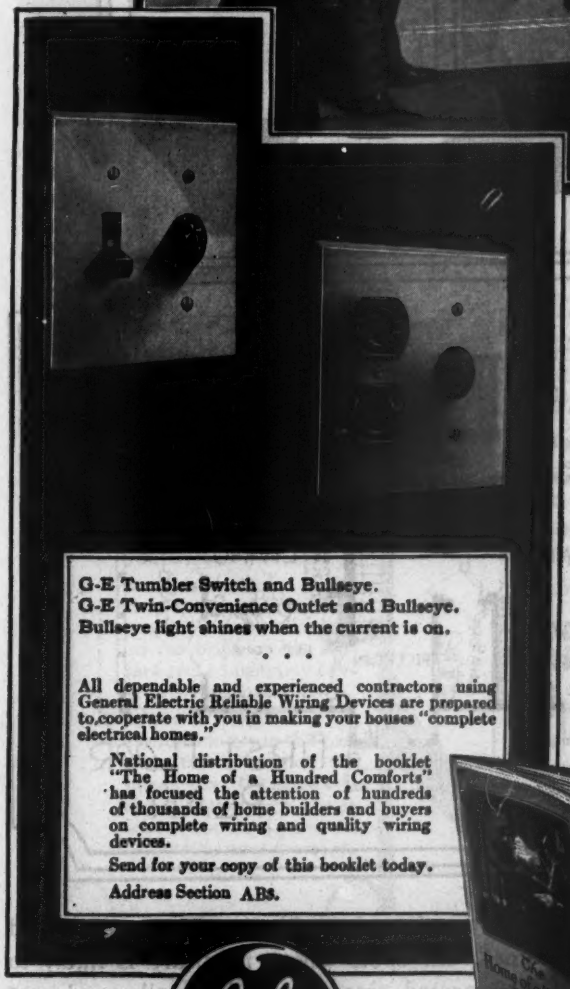
Another switch located inside the door controls this hall fixture, and this, too, is a 3-way one, its other point of control being at the head of the stairs in the upper hall. At the foot of the stairs is another 3-way switch, this one controlling the light in the upper hall, and this is also operated by a station in the upper hall. In other words, the light in the lower hall is controlled both from downstairs and up, and the same is true of the light in the upper hall. This arrangement should be placed in every home and will be found of the greatest possible convenience. With it a person can light the unit in the lower hall and the one upstairs, thus assuring ample light in ascending, and can extinguish both when he reaches the second floor. It is really and truly a step-saver.

This Living Room Is an Inspiration Both as to Electrical Appointments and Furnishings.

The living room on the right of the reception hall is lighted by six wall brackets and a main ceiling unit, both arrangements being controlled by switches placed near the door. Around the room at proper intervals are specified three duplex convenience outlets for use with portable lamps and household appli-

When they stop and ask

"How about an outlet for the electric iron?"—you show them this twin convenience outlet (for using iron and another device at the same time) at the right height and with tell-tale lamp that shines when the current is on.



G-E Tumbler Switch and Bullseye.
G-E Twin-Convenience Outlet and Bullseye.
Bullseye light shines when the current is on.

• • •

All dependable and experienced contractors using General Electric Reliable Wiring Devices are prepared to cooperate with you in making your houses "complete electrical homes."

National distribution of the booklet "The Home of a Hundred Comforts" has focused the attention of hundreds of thousands of home builders and buyers on complete wiring and quality wiring devices.

Send for your copy of this booklet today.

Address Section ABS.

Electricity for sales work as well as house work

Just as today's housekeeper lets electricity work for her, so does today's wide-awake builder let it work for him—helping him sell.

After it once becomes known that all of his houses are "wired for electrical housekeeping" his selling job is greatly simplified.

Complete wiring of highest quality is comparatively inexpensive. It can yield more profit per dollar invested and more prestige than any other item that goes into a house.

G-E Reliable Wiring Devices, nationally known as the standard of excellence, are the home buyer's assurance of dependable electrical service.

Merchandise Department
General Electric Company
Bridgeport, Connecticut

DEPARTMENT
ELECTRIC

Our Home Electrical

The Twelfth

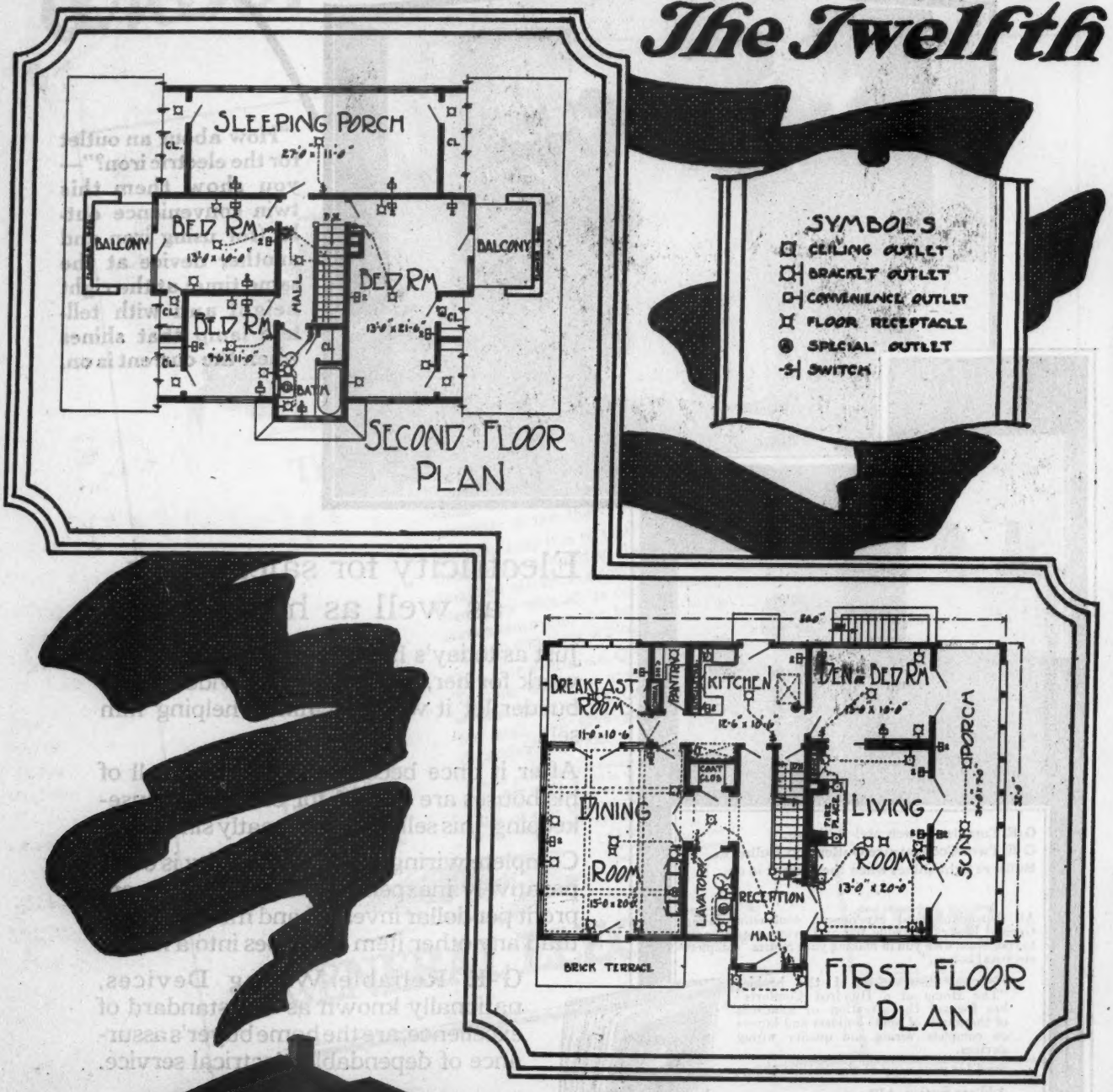


Photo and Plans of Our Home Electrical the Twelfth.

ances of various kinds. They are placed near the spots where furniture is likely to be located, since a lamp is usually used near an easy chair. In the center of the floor, too, is an outlet for use with a lamp on a living room table; if one is used, or with a bridge lamp behind the davenport if such an article of furniture is placed before the open fire, as is usually the case. Just above the top of the mantel over the fireplace will be found two convenience outlets of the single variety. These are intended for use with decorative candlesticks, torcheres or

5/16"

Not as deep as the plaster

JUST lay it on the surface, any surface, and let the plaster cover it. **Ovalflex** is thin—flat, flexible and handy. Its flatness gives it a multitude of uses, a score or more of practical economies.

Ovalflex, The Flat Armored Cable, fits into your jobs as snug as a thin dime in a pocket. On brick or tile walls, over wood joists or studding, with no grooving, cutting nor boring. It bends sharply edgewise; sharper flatwise. Think what these features mean in time, in convenience, in actual money saving.

It is safe, satisfactory and economical to specify and use **Ovalflex.**

Use **OVALFLEX**

On Outside Walls
Plaster over it; outlets can be readily installed at any point.

For Office Extensions
a slender groove in the plaster is all that is necessary to tap a circuit and carry it to the location you wish.

Over the Mantel
the flatness of **Ovalflex** enables it to be laid right on the brick or tile surface and completely covered with plaster.

Surface Wiring
Bends snug into the corners, fits into such flat boxes that **Ovalflex** is appropriate many places where round armored conduit cannot be used.

National Metal Molding Company

WORLD'S LARGEST PRODUCERS OF ELECTRICAL CONDUITS AND FITTINGS

1174 **Fulton Building, Pittsburgh, Pa.**

Represented in All Principal Cities [3]

Ovalflex

Attractive Modern Rooms Are Open and Well Lighted Day and Night.

some other form of secondary illumination.

The sun porch is located just off the living room, and the illumination here is provided by two lighting units, switch controlled. Since the sun porch will be used a great deal as long as the weather permits, arrangements are made to permit the use of portable lamps and electrical appliances by specifying two duplex outlets on the wall of the house. An electric fan during the heated spell, or a radiant heater when autumn arrives will probably be called upon to add to the comfort of the members of the household, and these outlets will permit of their use without the necessity of detaching the portable lamp which may be attached to it on the "extra" side.

The den, or bedroom, on the first floor is lighted by a ceiling unit and two wall brackets. The former is controlled by a switch located near the entrance to the porch. In case this room is to be used as a maid's bedroom, the switch should be put on the opening side of the kitchen door, where it will be more easily operated. There are also two duplex outlets for use with lamps or appliances or both.

The kitchen is lighted by a main ceiling unit and by another individually controlled one placed over the sink, where it will eliminate the shadows usually cast by any one working there. There is a duplex convenience outlet placed on the wall beside the kitchen cabinet. This should be about 36 inches from the floor to make handy the attaching and detaching of appliances designed for use in the kitchen, which will usually be used on the work board. There is another duplex outlet on the wall near where a kitchen table is most likely to be placed, and this, too, should be 36 inches from the floor. There is a single outlet indicated for an electric ventilating fan, and this should be put on the wall about even with the top of the window frame. A power outlet for an electric range is also indicated for installation in the kitchen. The pantry is lighted by a single pull-chain unit.

In the breakfast room there have been specified a central ceiling lighting unit, a floor outlet for use with appliances on the dining room table, and a duplex convenience outlet placed waist high on the wall for use with appliances on a serving table or some other article of furniture.

Six wall brackets are placed at intervals around the walls in the dining room, and a main lighting unit has been indicated for over the table. The three duplex convenience outlets are placed on the walls 36 inches above the floor for use with electrical appliances on various articles of furniture. They have been placed where it is most likely that furniture will be located. In the center of the floor, under the dining room table, there is another outlet for use with appliances. Very often it is desired to have the percolator or toaster or some other appliance on the table during the meal, and this arrangement makes it possible to do so without the unsightly dangling wires which mar the table there when appliances receive their current from the lighting fixture overhead.

Dining Room Lighting Artistically Handled.

Electrify All Buildings

HUBBELL

At the doorway—
A TOGGLE SWITCH

—for here convenience is of paramount importance.

Just a flip of the finger or a lift of the elbow will operate a Hubbell Toggle Switch. When equipped with a luminous tipped toggle arm, it can be instantly located even in the darkest room.

Hubbell Toggle Switches are handsome in appearance and lend dignity to any room. They are made in single pole, double pole, three-way and four-way types, with plain or luminous tipped toggle arms.

Luminous Toggle Arm. Tipped with a faceted glass jewel covering genuine *Undark* Radium Luminous Material.

Hubbell DeLuxe Toggle Switch, No. 8121. Equipped with luminous tipped toggle arm. Plate No. 8291.

HARVEY HUBBELL INC.
ELECTRICAL WIRING DEVICES
BRIDGEPORT CONN. U.S.A.

ELECTRICAL WIRING DEVICES

In the passageway between the reception hall and the dining room there is a lighting unit which is individually controlled by a pull-chain socket. This will give sufficient light to enable one to see in the clothes closet. The lavatory is lighted by a switch-controlled pair of wall brackets on either side of the mirror over the basin. The switch will be placed near the door leading from the passageway.

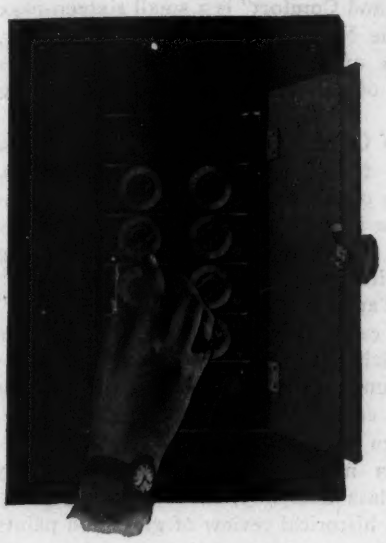
At the head of the stairs in the upper hall is the light which is controlled by the 3-way switch referred to above, and immediately beside this is the switch which operates the light in the lower hall.

Cozy Bedroom in the Model Electrical Home.

Each of the bedrooms is lighted by switch-controlled units placed in the center of the ceiling, and each has in addition wall brackets placed around the room. The closets in the rooms are illuminated by pull-chain fixtures placed just above the top of the door, with the cord hanging down well within reach. This type was selected because it permits leaving the door open when cleaning, airing, etc., without the necessity of having the light "burning." A liberal supply of convenience outlets has also been specified for each of the bedrooms, and they are arranged so that they will fit practically any arrangement of the furniture. These outlets should be placed about 36 inches above the floor, since they are to be used with electrical appliances of various kinds. The one designed to go at the head of the bed, or beds, however, should be in the baseboard. It is designed to operate a bedside reading light, or one placed on a table.

The illumination of the bathroom is provided by the installation of bracket outlets on either side of the mirror over the basin, and these are operated by a wall switch placed near the door. A duplex convenience outlet has been specified to be placed just above the basin for use with an electric shaving mug, water heater or some other appliance which may be used there.

Do You Build Homes?



Type R
Safety Type
Residence
Panelboard

Make Panelboard Safety and Convenience Selling Points

Practically all wiring is concealed after the home is built. The panelboard alone remains. You can indicate the quality of the entire wiring job by using the FA Type R Residence Safety Type Panelboard. Because of its absolute safety it can be located at the center of distribution, which costs less in labor and material and adds greatly to the convenience in fuse changes.

The FA Safety Type R Residence Panelboard is the last word in modern, safety type, panelboard engineering. It can be used with equal facility in residences, apartment buildings and stores. It is a factory product of standardized unit construction, that costs less—installed—than the old-fashioned porcelain-block, fuse-plug assembly.

You should have the full story. It means more profit to you. Write for "Wiring the Home for Comfort and Convenience," which gives full information and complete wiring diagrams.

Frank Adam
ELECTRIC COMPANY
ST. LOUIS

District Offices:

Detroit, New York, Dallas, Minneapolis, Kansas City, Cincinnati, Indianapolis, New Orleans, Chicago, Denver, San Francisco, Los Angeles, Seattle, Philadelphia, Pittsburgh.

Manufacturers of

Major System of Theater Lighting Control; Triumph Line of Safety Type, Standardized Panelboards and Cabinets; knife switches; safety switches; hanger outlets; reversible-cover floor boxes; A. C. and D. C. Distribution Switchboards.

Home - Kitchen Equipment

Electrical ventilation is really the most appreciated and least expensive feature in the kitchen equipment of the modern home.

Fasily installed. Send for ou bulletin. Engineering advice if needed. Write us today.

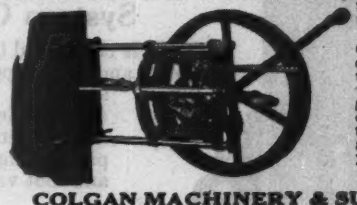
The Emerson Electric Mfg. Co.
2018 Washington Avenue
50 Church Street
New York City
St. Louis, Mo.

EMERSON
Residence Ventilators

Why Waste Time and Money This Way?

—trying to cut mortises, when you can do the job easier and better with the new improved Champion Mortiser? All you need do is to attach machine to the door, set it for the desired length and depth of mortise, then turn the handle. The result is a perfect mortise every time—and you never have to use brace and bit or hammer and chisel.

And the results are always the same, whether the wood is hard, soft, cross-grained, end wood or through dowel pins—a perfect mortise with straight sides, smooth bottom and uniform depth. Cuts any size mortise from ¼" to ½" width and from round hole to 6¼" slot. Can be used on stock ½" to 2½" thickness. Balanced fly wheel insures uniform speed and smooth cutting. Special base for mortising wide stock furnished extra. Price for new improved Champion complete with any two bits (¼" to ½") $40.00 F. O. B factory.



Carpenters, contractors, cabinet makers and all kinds of woodworkers, throughout the United States are using the Champion Mortiser with great success. Get a Champion on our guarantee. If not satisfied after ten days trial, return at our expense and get your money. We protect you. Send TODAY!

COLGAN MACHINERY & SUPPLY CO.
403 Hayden Bldg., Columbus, Ohio

The Champion Mortiser will do the job five times Faster, Easier and Better!

"Drawing Instruments"—Catalog C-24. A catalog containing thirty-two pages of valuable data on drafting-room needs, published by the C. F. Pease Company, 884 N. Franklin Street, Chicago, Ill. The descriptions are very complete and the prices are quoted.

"Homes of Character." Probably one of the best books dealing with house designs of architectural merit has recently been published by R. L. Stevenson, 101 Tremont Street, Boston, Mass. The price is $2.00. There are over 300 excellent illustrations on the regular 8 by 11-inch page, and many of the designs given are prize-winners in house competitions. One exterior view, floor plan and a description are given for each house. This book will prove of special interest to architects, contractors and the prospective home builders.

"The Master Woodworker" is a very complete bulletin published by the Master Woodworker Manufacturing Company, of Detroit, Mich. It illustrates the various uses to which this machine may be put; blue prints are given describing this machine and the various photographs are shown in such clear detail as to materially assist the builder.

"The Fireproofing Handbook," recently published by the General Fireproofing Company, Youngstown, Ohio, deals with the problems of fireproofing construction, using as a basis their fireproofing materials—Self-Sentering, Trussit, Expanded Metal, Metal Lath, Steel Lumber and Steel Tile.

"Post's Catalogue"—Twelfth edition. This is the latest catalog published by Frederick Post of 319-321 S. Wabash Avenue, Chicago. Drawing material, slide-rules, drawing tables and stands, and a complete line of office materials and surveyors' supplies are given.

"Anchor Concrete Machinery." A very complete handbook on the concrete products machinery of the Anchor Concrete Machinery Company, 532 Dublin Avenue, Columbus, Ohio, deals with concrete block machinery, brick machines and equipment for cement products plants.

"Thrift in Lifting" is a booklet published by Herbert Morris, Inc., of Buffalo, N. Y., builders of cranes and hoists in which is given practical information in a very concise form. The photographs and diagrams are clear.

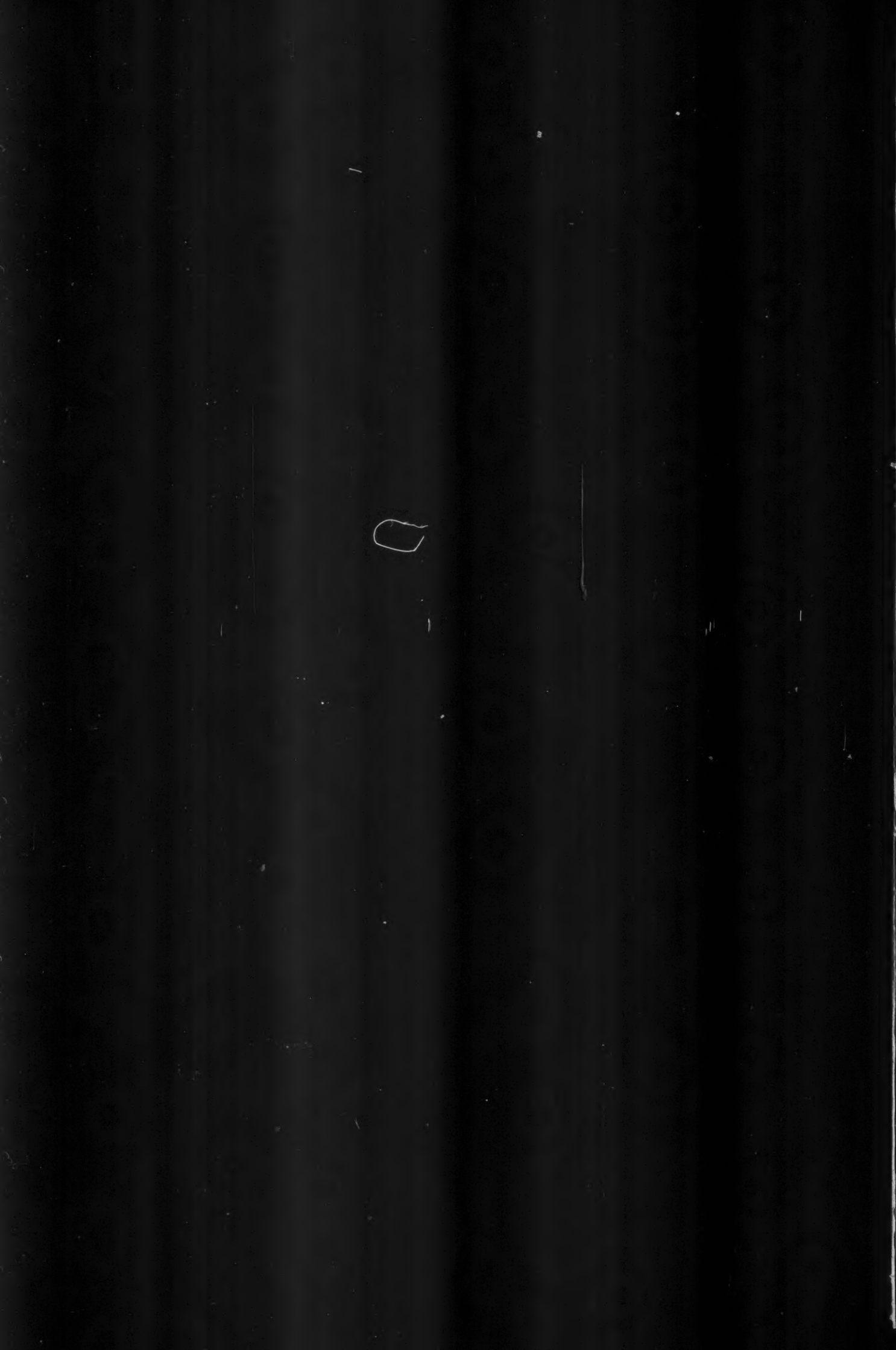
"A Matter of Health and Comfort" is a small sixteen-page circular, published by the New Jersey Wire Cloth Company. It gives a short history of the screen. Accompanying this circular is a pamphlet of interest to the dealer containing advertising suggestions.

"Henley's 222 Radio Circuit Designs" is a book of 252 pages dealing with the fundamentals of radio information, and containing diagrams of 222 circuits with a short description of each circuit. The price of this book is $1.00, and may be secured by writing the Norman W. Henley Publishing Company, 2 W. Forty-fifth Street, New York City, N. Y.

"Lufkin Measuring Tapes, Rules and Mechanical Tools," is the handsome new catalog issued by the Lufkin Rule Company, Saginaw, Mich. Its forty years of making boxwood, spring joint, aluminum rules and other measuring devices has given the company a deserved pre-eminence, apparent on every page of this book.

"Glass—Paints" is a most unusual catalog issued by the Pittsburgh Plate Glass Company, Frick Building, Pittsburgh, Pa. It gives an historical review of glass and paints from the discovery of these products of their varied present-day uses. Not a book for the merely curious, but for the architect, builder and dealer.

"Plan Reading and Quantity Surveying," by Chas. F. Dingman, is at hand from the McGraw-Hill Book Company, 370 Seventh Avenue, New York, N. Y. Price, $2.50. A comprehensive set of practical instructions for the man in the building construction field. Handy size, too.



AROUND THE FAMILY TABLE

The "World's Greatest" Show Opens

With the "Big Top" Pitched on the Main Street of the Nation, the Builders and Contractors Offer the Best Incentives for Home Building

WHAT did you think of the Building Shows last month?

Lots of people attended them and many of those were intensely interested in building. All seemed on the alert for new and novel devices.

The Crowds Liked the Home Shows

These shows certainly were educational—to those who took the trouble to get an education out of them. But so many seemed to wander about aimlessly, stopping where the crowd stops and accumulating literature for the children to carry. Most of the youngsters insisted on a complete collection, displaying early a thirst for information concerning the benefits of insulation and the process for making concrete waterproof.

But the shows offer great places to take real clients and show them just what can be installed in a home. And they doubtless do strengthen the urge to own a home which is latent in the breast of all men.

* * *

Building is the Biggest Incentive for More Building

After all, the biggest building show is the one you men "on the job" are staging every day you have your men at work on construction. Did you ever see a construction job which did not have a complete array of amateur and professional watchers? And not all of these are idlers. Even a busy man will stop for a few minutes to watch a crew of skilled workers. There is a fascination about a growing building which has an appeal which is almost universal.

This is true particularly of home building. You know how many persons will spend Sunday afternoon inspecting a home under construction. And if you have listened to the comments, you will wonder why all of this critical talent is allowed to remain outside of the building field.

The point of the whole matter is this—every one of these persons who has such strong individual ideas as to how a home should be built is really interested in building. And they notice each new development and remember it when they are ready to build for themselves.

Would it be worth while to station a good talker at these buildings during the evenings and on Sunday afternoon to explain the construction to the "lookers" and possibly to turn a number of them into builders of homes?

* * *

Politics Does Not Decrease Need for More Buildings

Have you heard much talk of this being the well-known presidential year? We haven't. It seems that a man and his family will have to have a place to live and call home even if a President is to be elected.

About the only ones who have any excuse for suspending building operations because this is a presidential year are those who hope that their address may be changed to a certain rent-free house in Washington, generally known for its color or lack of color. There are relatively few of these hopefuls in the United States, for which we are thankful.

* * *

Can any of the AMERICAN BUILDER readers who have had experience in the Oil Fields suggest a method of stopping the Senate gushers?

Because we believe that more toil and less oil in Washington would suit the rest of the country to a T.

* * *

Is Your Equipment Fit to Fight?

Have you gone over your equipment carefully so that you know just what you need for your summer and fall building campaign? If not you lack definite knowledge of what you may expect during the season. Just as a chain is no stronger than its weakest link, so no builder can do better work or more work than his equipment will allow.

And when you are wondering if you can make the old equipment last the season out, wonder a little how much it will cost you in lost time if an essential machine goes wrong at a critical time.

* * *

Senator Stresses Need for Workers

We are educating 90 per cent of our youth to be white-collar workers, but have white-collar jobs for only 10 per cent, declares Senator Capper, of Kansas, in a recent editorial. The result of this over-production of white-collar workers is bound to be as disastrous, economically, as over-production in wheat or agricultural products, he says.

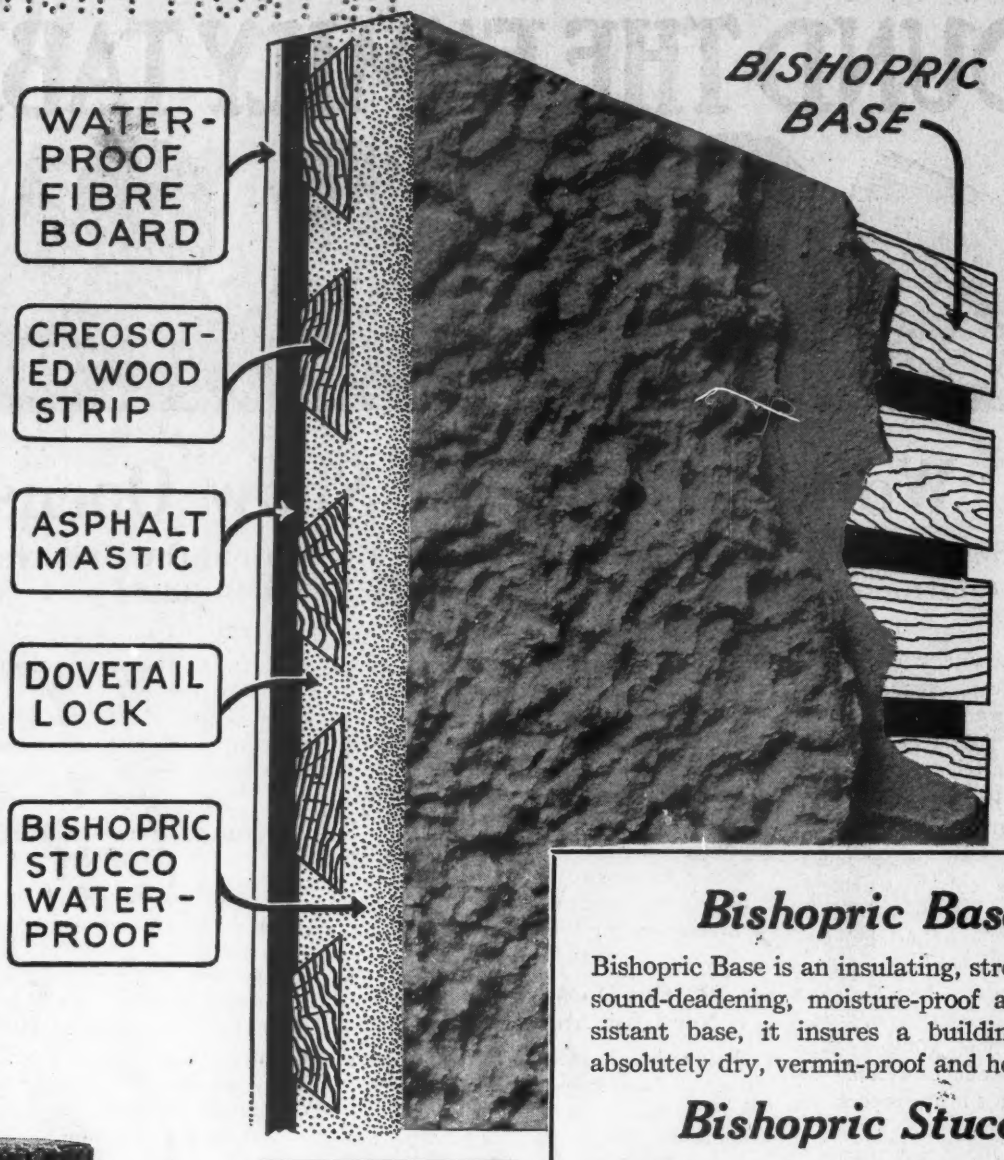
"Our industries clamor for the trained worker," says the Senator. "But our schools continue to turn out thousands upon thousands of young men and women fitted only for already over-crowded professions.

"Many different reasons are assigned by historians for the fall of the Roman Empire. Rome, however, did not fall until the Romans grew too proud to labor. Neither physically, morally, nor economically can any white-collar nation long endure. The fiber, stability, and soundness of American life depend on establishing the dignity of labor, not as a copy-book maxim, but as a national habit of mind."

What is needed in America today is a better balanced educational system, Senator Capper declares.

"A trade, vocational training for all is the complement of a balanced education," in his opinion. "Without such training for its citizens, the United States cannot maintain its traditions, its national health, nor its place in the world. We must educate hand as well as head. Such training builds character as well as self-reliant independence. We are beginning to see it and certainly none too soon."

—EDITOR AMERICAN BUILDER



Bishopric Base

Bishopric Base is an insulating, strengthening sound-deadening, moisture-proof and fire-resistant base, it insures a building that is absolutely dry, vermin-proof and healthy.

Bishopric Stucco

over Bishopric Base is water-proof and fire-proof. No contraction or expansion. All the elements of wear and tear have been anticipated in the manufacture of BISHOPRIC.

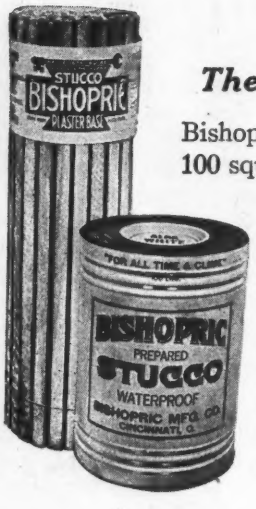
Free—"Bishopric For All Time and Clime," beautifully illustrated booklet sent on request.

PLAN BOOK containing many attractive designs with floor plans will be sent upon receipt of 25c, coin or stamps.

Bishopric is Sold by Dealers Everywhere

The BISHOPRIC MANUFACTURING Co.
5 ESTE AVE. CINCINNATI, OHIO.
NEW YORK CITY CINCINNATI OTTAWA, CANADA

The BISHOPRIC MFG. CO. OF CALIFORNIA
LOS ANGELES



The Roll and the Drum

Bishopric Base is shipped in rolls 100 square feet to the roll. It is easily handled, quickly cut to desired size and there is no waste.

Bishopric Stucco is packed in air-tight metal drums preventing deterioration and loss, either in transit or storage, or on the job.

BISHOPRIC

Stucco Over Bishopric Base